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Water PIE Use Case Review			
Role	Name	Signature	Date
Subject Matter Experts	Greg Smith		
	Eric Senter		
	Mary Scruggs		
	Bruce Agee		
	Michael Gardner		
DWR DTS Project Manager	Diane Huey		
DWR or Contractor Business Analyst	Carrie Czajkowski		
Water PIE Program Manager	Greg Smith		

Water PIE Use Case Approval Signatures			
Role	Name	Signature	Date
Water PIE Steering Committee	Kamyar Guivetchi		
	Dean Messer		
	Nancy Miller		

Preface:	This contains the Use Cases and storyboards for Water PIE Phase 1.
Author:	Carrie Czajkowski, M Corp
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Document History			
Date	Version	Page or Section	Description
03/24/2013	0.1		Draft use cases and storyboards developed through cross-functional working sessions with subject matter experts.
4/25/2013	0.2		Draft use cases and storyboards updated based on comments from Program Manager.
5/22/2013	0.3		Updated based on comments from the Project Manager and Subject Matter Experts.
8/5/2013	0.3.2		Updated based on comments from Tim Garza.
8/25/2013	1.0		Updated after final review from Subject Matter Experts and Program Manager

## PART 1: CHAPTER INTRODUCTION

This chapter describes the functional requirements for Water PIE through use case definitions and depicts the use cases through storyboard diagrams. The storyboard diagrams are included for further definition of the functional requirements only. The storyboards do not represent the Water PIE interface design.

### SECTION 1.1: USE CASE APPROACH

M Corp's approach to documenting the Water PIE use cases and storyboards was to:

- Understand the business need for Water PIE phase I
- Understand the business need for Water PIE in later phases

The M Corp team's method for developing the use cases was to draft use cases and storyboards based on the business needs identified during the initial business requirements analysis. The team held cross-functional working sessions with subject matter experts to refine the use cases and storyboards. Finally, M Corp updated the use cases and storyboards based on feedback received during the working sessions and provided by the program manager. This document is the result of that effort.

## PART 2: FUNCTIONAL REQUIREMENT DESCRIPTIONS

The team organized the functional requirement description section by functional area:

- User Management
- Managing a Spoke
- Searching for Data
- Water PIE Administration
- My Water PIE

Each functional area has a process flow that outlines the business process, a Unified Modeling Language (UML) diagram that outlines the use cases, use case definitions that define the actor's interactions with the system, and storyboards that depict the functionality described in the use cases. The business process diagrams reference the use case that addresses the functionality indicated in the process step. For a legend of process flow icons, see Appendix A. Each use case references the storyboard diagrams that illustrate the functionality in the use case.

### Roles

During the development of the functional requirements, the subject matter experts defined four primary roles. The table below discusses each role.

Role	Who	Description
User	General Public (Anyone)	<ul style="list-style-type: none"> <li>• Can search for data using the map features</li> <li>• Can download data</li> <li>• Can download shapefiles</li> <li>• Can generate hydrographs of time series data</li> <li>• Can run public configurations, see section 2.5 for more information on public configurations</li> </ul>
Registered User	General User who creates a User ID and Password	All of the access of the User and: <ul style="list-style-type: none"> <li>• Can save, use, and share searches and views through a My Water PIE account</li> </ul>
Spoke Steward	Spoke Owner(s)	All of the access of the Registered User and: <ul style="list-style-type: none"> <li>• Can administer one or more spokes</li> <li>• Can make other registered users spoke stewards for the spokes within their purview</li> </ul>
DWR Water PIE Administrator	DWR Water PIE Owner	All of the access of the spoke steward and: <ul style="list-style-type: none"> <li>• Can administer Water PIE features, including the common language dictionaries and elements, managing DWR hosted shapefiles, and managing unit conversions</li> </ul>

		<ul style="list-style-type: none"> <li>• Can approve a spoke's registration</li> <li>• Can make a registered user a spoke steward or DWR Water PIE administrator</li> </ul>
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The document uses the term 'actor' frequently. An actor is a generic term for an actor interacting with the system irrespective of role.

### Use Case Patterns

The Water Pie use case definitions prefix many of the use cases with the word "Configure". The use case utilizes the term Configure meaning create, read, update, and delete (CRUD) an entity in the use case. Each Configure use case follows the same pattern. Rather than repeating the process steps for each 'Configure' use case, the use case references a use case pattern where appropriate. The use case patterns are located in section 2.6.

## **SECTION 2.1: USER MANAGEMENT**

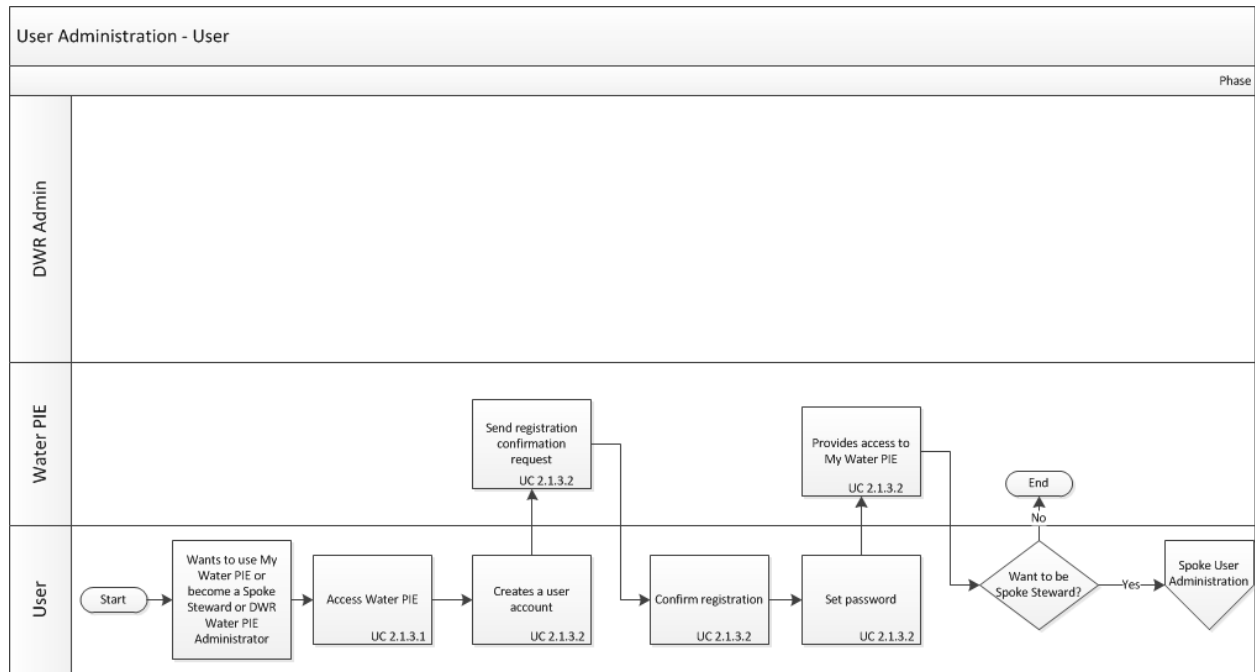
This section provides process flows, use cases, and storyboards for user registration and user management in Water PIE. User registration includes functions such as how an actor will access the system, register with Water PIE, and the creation of roles for spoke stewards.

This section includes the following subjects: access Water PIE without authentication, perform user registration, perform forgot username/password, perform login, configure user profile, associate/disassociate role, inactivate user, perform logout.

### **SECTION 2.1.1: PROCESS FLOW DIAGRAM**

The user administration process illustrates how actors will register with Water PIE. An actor is not required to register with Water PIE, but actors who want to access additional features, such as the ability to save searches or system settings, or who want to become spoke stewards or DWR Water PIE administrators, will first need to create a user account in Water PIE.

The account will be setup with the actor's user identification (ID), email account and a password. The system will verify this account by sending an email to the actor. The actor can confirm registration by clicking a link in the email.

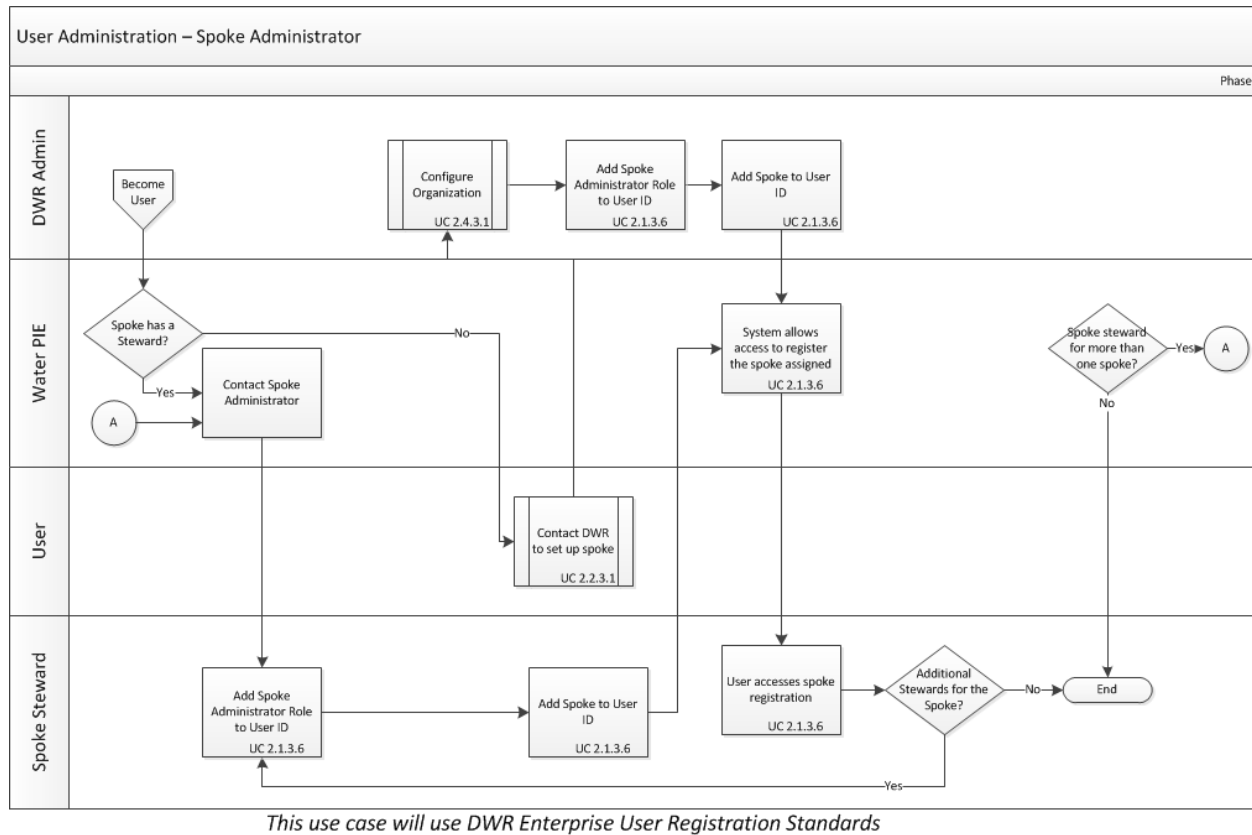


*This use case will use DWR Enterprise User Registration Standards*

Figure . User Administration – Registering a User Account

If the actor wants to be a Spoke Steward, the actor must first complete the user registration process. If the spoke does not exist, the actor must contact DWR to set up the organization and begin the spoke registration process. Once the DWR Water PIE Administrator has created the spoke in the system, the DWR Water PIE Administrator will update the registered users account with the role of spoke steward.

If the spoke already exists, the system will notify current spoke steward(s) and DWR administrator(s) of the request to add an additional spoke steward. It is the responsibility of one of the current spoke administrators to approve the request. The actor may contact the DWR Water PIE administrator if the spoke administrator does not respond in a timely manner.



### Figure . DWR Water PIE Administrator Creates Spoke Steward

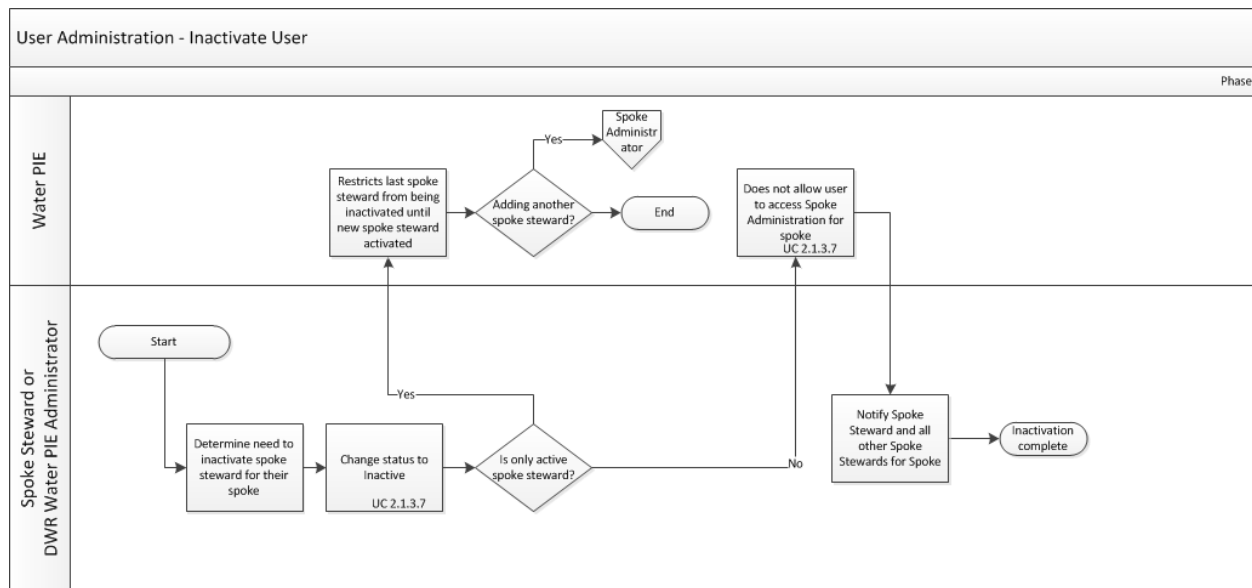


Spoke stewards may deactivate a registered user's account in the same organization. DWR Water PIE administrators may deactivate any user's account.

When a spoke steward is deactivated, the system notifies all spoke stewards for the spoke along with the DWR Water PIE Administrators.

A spoke must have an active spoke steward to participate in Water PIE. If the DWR Water PIE Administrators or the spoke steward attempts to deactivate the only spoke steward's account for the spoke, the system will prevent the deactivation of the spoke steward. The organization will have to identify a different spoke steward before the spoke steward's account can be deactivated.

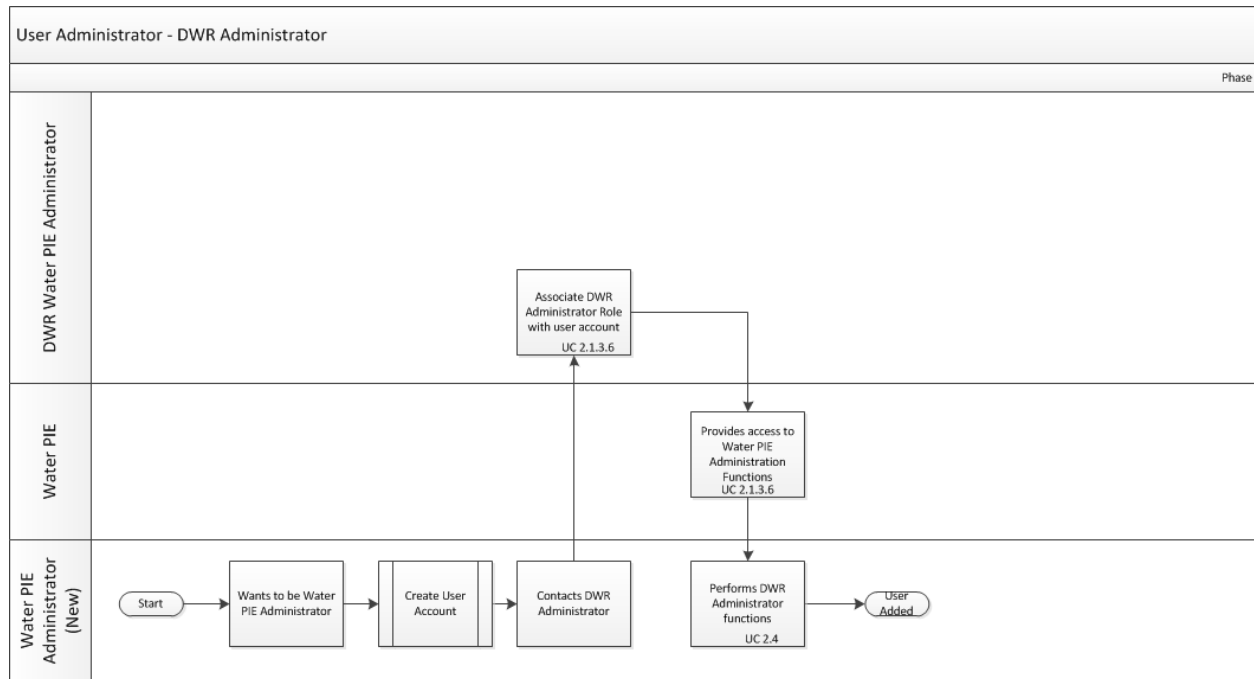
Note: an deactivated user can be re-activated at any time.



*This use case will use DWR Enterprise User Registration Standards*

**Figure . User Inactivation**

Creating a DWR administrator begins with the user registration process. The actor contacts the DWR Water PIE administrator who changes the role of the actor to Water PIE Administrator. The actor now has access to all administrative functions within the system.

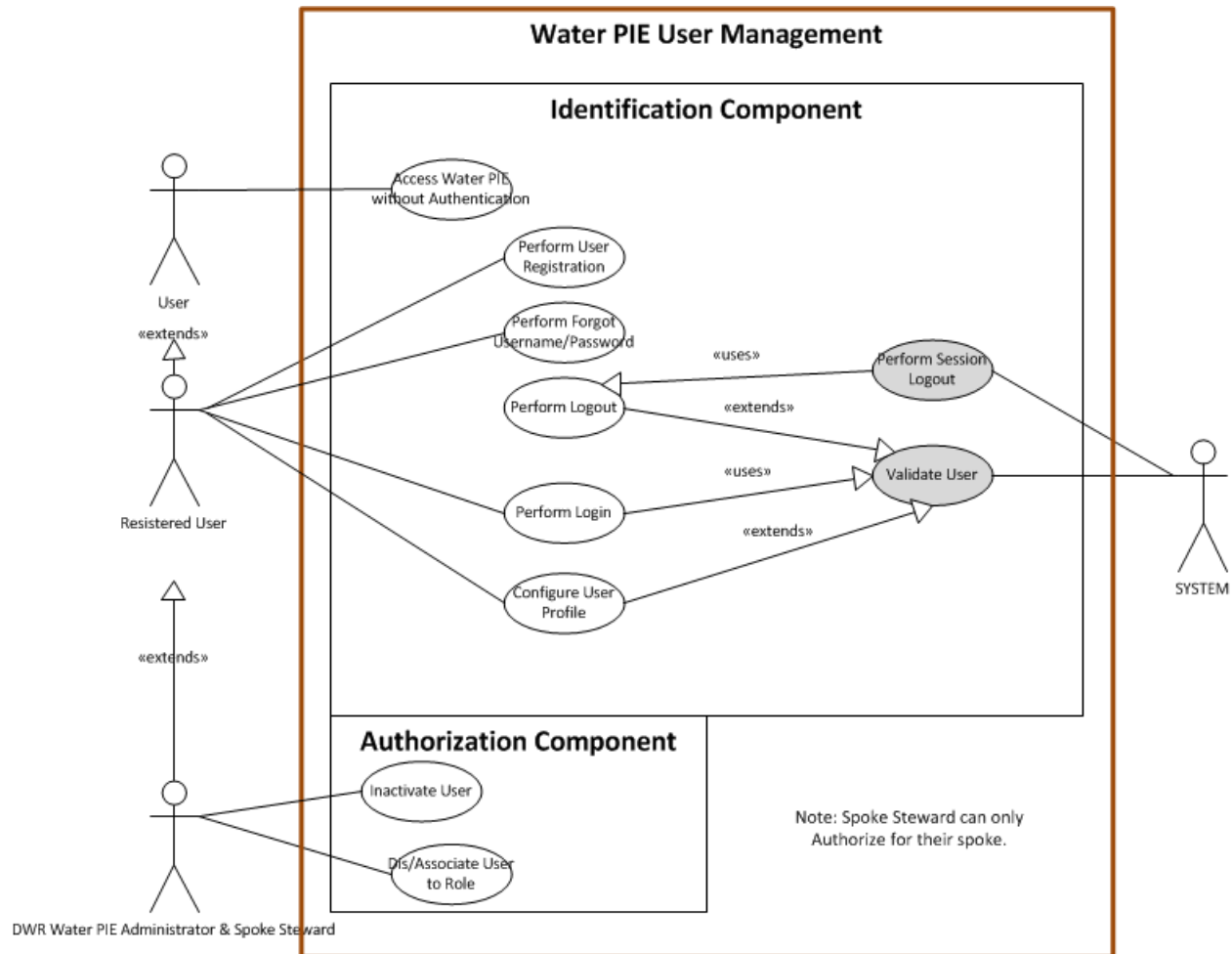


*This use case will use DWR Enterprise User Registration Standards*

**Figure . Adding DWR Water PIE Administrator**

## SECTION 2.1.2: UML

The Water PIE User Administrator UML Diagram below depicts the use cases included in the User Administration Process described in section 2.1.3.



**Figure 5. User Administrator Unified Modeling Language Diagram**

## SECTION 2.1.3: USE CASES

### Section 2.1.3.1: Access Water PIE without Authentication

Name	2.1.3.1 Access Water PIE without Authentication
Description	<p>This use case describes the process of accessing the system without user authentication. Users will have limited functionality when accessing the system without user authentication.</p> <p>This use case begins when the user accesses Water PIE and ends when the system is ready for use.</p> <p>This process must support the DWR Enterprise User Registration Standards.</p>

<b>Name</b>	<b>2.1.3.1 Access Water PIE without Authentication</b>
Storyboards	Section 2.1.4.1: Log In without Authentication
Precondition / Assumptions	None
Actors	User
Steps	<ol style="list-style-type: none"> <li>1. Actor accesses Water PIE.</li> <li>2. System prompts actor to acknowledge terms of use message and display My Water PIE and Registration options.</li> <li>3. Actor acknowledges the message without logging into My Water PIE or register as new user.</li> <li>4. System displays map-based search screen.</li> <li>5. The system remembers and displays the configuration the actor last viewed (layers and data sources selected and view customization).</li> </ol> <p>Note: if there is a technical limitation on this feature for users, the feature can be applied to registered users only.</p>
Variations	<ol style="list-style-type: none"> <li>1. Actor logs into My Water PIE using user name and password, see use case Perform Login.</li> <li>2. Actor chooses to register as a user, see use case Perform User Registration.</li> </ol>
Exceptions / Business Rules	<ol style="list-style-type: none"> <li>1. Actor must acknowledge message before the actor can use Water PIE.</li> </ol>
Post Condition	Actor accesses Water PIE as a without authentication.
Attributes	None

### Section 2.1.3.2: Perform User Registration

<b>Name</b>	<b>2.1.3.2 - Perform User Registration</b>
Description	<p>This use case describes the process for registering for a My Water PIE account.</p> <p>This use case begins when an actor begins registration for a Water PIE account. The use case ends when the actor is a registered user.</p> <p>This process must support the DWR Enterprise User Registration Standards.</p>
Storyboards	Section 2.1.4.2: Register as a My Water PIE User
Precondition / Assumptions	Actor has accessed the system via the website.
Actors	User
Steps	<ol style="list-style-type: none"> <li>1. System prompts actor to register.</li> <li>2. System displays interface for entering user information.</li> <li>3. Actor provides identifying information including email address, name, organization (from controlled vocabulary list) and password.</li> </ol>

Name	2.1.3.2 - Perform User Registration		
	<div>4. System validates the information entered against the business rules</div> <div>5. System sends an email to the actor with a confirmation link to the Water PIE website.</div> <div>6. Actor confirms registration by selecting the link to the Water PIE website.</div> <div>7. System notifies actor that registration is complete.</div>		
Variations	<div>In 2 -</div> <div>1. Actor does not want to register and cancels process.</div> <div>2. System allows actor access to Water PIE but not My Water PIE.</div> <div>In 5 –</div> <div>1. Actor enters an email address that cannot be verified by the system.</div> <div>2. System allows actor to register again or access without authentication.</div>		
Exceptions / Business Rules	<div>1. Email address must be unique.</div> <div>2. Entered password must pass password security standards.</div>		
Post Condition	The actor has registered with Water PIE and can access My Water PIE account.		
Attributes			
	Attribute	Description	Unique
	User ID	Self-created user ID name	Yes
	Email	Email address	Yes
	Repeat Password	The password is entered a second time for verification	
	Organization	Organization user of which user is a member	Yes

### Section 2.1.3.3: Perform Forgot Username/Password

Name	2.1.3.3 - Perform Forgot User Name (ID?)/Password
Description	<p>This use case describes the process for gaining access to an actor's account when the actor forgot the user name and/or password for the account.</p> <p>This use case begins when an actor triggers forgot user name/password function.</p> <p>This use case ends when the system restores actor's access.</p> <p>This process must support the DWR Enterprise User Registration Standards.</p>
Storyboards	Section 2.1.4.3: Log into Water PIE
Precondition / Assumptions	Actor accesses Water PIE.  Note: This process may change based on DWR Technical Requirements. The technical team will review this process during development of the SRD.
Actors	Registered User
Steps	1. Actor selects 'forgot User ID/password' function.

Name	2.1.3.3 - Perform Forgot User Name (ID?)/Password		
	2. System prompts actor to enter email address. 3. Actor provides information. 4. System sends registration link to actor's email and notifies actor to change the password on the account. 5. Actor opens link. 6. System opens and prompts actor to enter new password. 7. Actor provides new password. 8. System validates password. 9. System accepts the new password, and notifies actor.		
Variations	In 2 1. Actor does not want to re-register.  In 4 1. Actor enters invalid email. 2. System notifies actor email is invalid and allows actor to try another email.  In 7 1. Actor enters password that does not meet security standards. 1.1. System prompts actor to enter password that meets requirements. 1.2. Actor enters appropriate password. 1.3. System registers actor.		
Exceptions / Business Rules	1. Password must pass password security standards.		
Post Condition	System provides actor access to My Water PIE account.		
Attributes			
		<b>Attribute</b>	<b>Description</b>
		Organization	Actor's organization
		Old Password	Password user is replacing
		New Password	User's new password
		Repeat Password	The password is entered a second time for verification

**Section 2.1.3.4: Perform Login**

Name	2.1.3.4 - Perform Login
Description	<p>This use case describes the process of logging into a registered user's My Water PIE account.</p> <p>This use case begins when an actor attempts to login to the system. The use case ends when the system allows the actor access to the actor's My Water PIE</p>

Name	2.1.3.4 - Perform Login		
	account. This process must support the DWR Enterprise User Registration Standards.		
Storyboards	Section 2.1.4.2: Register as My Water PIE User Section 2.1.4.1: Access Water PIE without Authentication		
Precondition / Assumptions	1. Actor has access to Water PIE. 2. Actor has successfully registered for My Water PIE account.		
Actors	Registered User		
Steps	1. System prompts actor to login. 2. Actor provides User ID and password. 3. System validates User ID and password. 4. System logs actor onto Water PIE. 4.1. System notifies actor of successful login.		
Variations	In 2 1. Actor enters incorrect User ID or password. 1.1. System prompts actor that User ID or password incorrect. 1.2. Actor reenters User ID or password.  In 2 1. Actor does not want to login with User ID. 2. Actor accesses the system without user authentication  In 2 1. Actor forgot User ID or password. 1.1. Actor selects, see use case Forgot User ID/Password.  In 3 1. Actor has been inactive for extended period. 1.1. System will prompt actor with email to reset password.		
Exceptions / Business Rules	<b>1.</b> Password must pass password security standards. <b>2.</b> System will lock the actor's account if the actor enters an incorrect password too many times. The DWR Enterprise User Registration Standards will dictate the number of allowable incorrect password entries.		
Post Condition	System provides actor with access to Water PIE based on the actor's user role.		
Attributes			
	Attribute	Description	Unique
	User ID	Self-created user ID name	Yes

Name	2.1.3.4 - Perform Login		
	Email	Email address	Yes
	New Password	Password user is changing to	No

### Section 2.1.3.5: Configure User Profile

Name	2.1.3.5 - Configure User Profile
Description	<p>This use case describes the process of modifying a registered user's profile.</p> <p>This use case begins when a registered user has logged on to the system. The use case ends when the actor has updated the actor's profile and the system has saved the update.</p>
Storyboards	<p>2.1.4.5: Change User Profile and Request Role</p> <p>2.1.4.6: Manage User Roles</p>
Precondition / Assumptions	The actor has accessed the system via the website, successfully registered as a My Water PIE user, and has successfully logged into the actor's My Water PIE account.
Actors	Registered User
Steps	<ol style="list-style-type: none"> <li>Optional- Actor changes account settings. <ol style="list-style-type: none"> <li>Actor changes user information and selects update.</li> <li>System stores updates and notifies actor of accepted changes.</li> </ol> </li> </ol>
Variations	<p>In 1</p> <ol style="list-style-type: none"> <li>Actor selects change user ID, email, or password.</li> <li>System displays change profile screen.</li> <li>Actor updates profile. <ol style="list-style-type: none"> <li>If password, system validates password.</li> </ol> </li> <li>System notifies actor of accepted profile change.</li> </ol> <p>In 1</p> <ol style="list-style-type: none"> <li>Actor selects request Spoke Steward Role.</li> <li>System displays Spoke Steward access request page.</li> <li>Actor completes Spoke Steward access request page and triggers request.</li> <li>System notifies all spoke stewards for spokes identified by actor of pending request.</li> <li>Go to section 2.1.3.6.</li> </ol>
Exceptions / Business Rules	<ol style="list-style-type: none"> <li>Password must pass password security standards.</li> </ol>
Post Condition	System stores updated user profile.



Name	2.1.3.5 - Configure User Profile		
Attributes			
	<b>Attribute</b>	<b>Description</b>	<b>Unique</b>
	User ID	Self-created user ID name	Yes
	Email	Email address	Yes
	New Password	Password user is changing to	No
	Phone Number	Spoke Steward's phone number	No
	First name	Last Name of the Registered User	No
	Last Name	First name of the Registered User	No
	Organization	Organization with which the user is affiliated	No

### Section 2.1.3.6: Associate/Disassociate Role (Configure Spoke Steward & DWR Water PIE Administrator)

Name	2.1.3.6 - Associate/Disassociate Role
Description	<p>This use case describes the process for associating or disassociating user roles with a registered users account.</p> <p>The use case begins when a registered user wants to become a spoke steward. The use case ends when a registered user becomes a spoke steward.</p>
Storyboards	Section 2.1.4.6: Manage User Roles
Precondition / Assumptions	<ol style="list-style-type: none"> <li>1. Actor has navigated to the Water PIE Website.</li> <li>2. Actor is a registered user within an organization recognized as a spoke by Water PIE.</li> <li>3. Actor has accessed My Water PIE.</li> </ol>
Actors	DWR Water PIE administrator or spoke steward
Steps	<ol style="list-style-type: none"> <li>1. Actor selects User Administration.</li> <li>2. System displays User Administration interface listing the system's registered users.</li> <li>3. Actor finds registered user in user list either by searching by name and/or filtering by organization and then name.</li> <li>4. Actor selects registered user.</li> <li>5. System displays registered user information.</li> <li>6. Actor selects Role: <ol style="list-style-type: none"> <li>6.1. Registered User</li> <li>6.2. Spoke steward</li> <li>6.3. DWR Water PIE administrator</li> </ol> </li> <li>7. Actor selects update.</li> <li>8. System updates user's role to new role and displays in the list.</li> </ol>

Name	2.1.3.6 - Associate/Disassociate Role		
Variations	In 6.2 1. If role is spoke steward, actor must associate the user with one or more spokes.		
Exceptions / Business Rules	1. Only DWR Water PIE administrators can associate a role of DWR Water PIE administrator. 2. The list of registered users is constrained by the role and spoke of the actor accessing the list; for example, a spoke steward will only see users identifying themselves as a part of the spoke steward's spoke. A DWR Water PIE administrator will see all users. 3. A spoke cannot be active without an active spoke steward. If the actor attempts to remove the only spoke steward from a spoke, the system will prevent the action.		
Post Condition	User role is changed.		
Attributes			
	<b>Attribute</b>	<b>Description</b>	<b>Unique</b>
	User ID	Self-created user ID name	Yes
	Email	Email address	Yes
	First name	Last Name of the Registered User	No
	Last Name	First name of the Registered User	No
	Status	Active or inactive user	
	Role	Determines user's security and abilities	No
	Spoke	Determines which spoke(s) the user can access.	No

### Section 2.1.3.7: Inactivate User

Name	2.1.3.7 - Inactivate User
Description	This use case describes the systems inactivate functionalities. This use cases extends to both DWR Water PIE administrators and spoke stewards. The use case begins when an actor wants to inactive an account, and ends when that account is inactivated.
Storyboards	Section 2.1.4.6: Manage User Roles
Precondition / Assumptions	1. Actor has been inactive within system for extended period. 2. Administrator is logged in.
Actors	Registered user, DWR Water PIE administrator, spoke steward, second registered user
Steps	1. Actor has been inactive for extended period OR actor wishes to be removed from system OR actor 1 wants to remove actor 2 from the system. 2. Spoke steward or Administrator determines if actor should be inactivated.

Name	2.1.3.7 - Inactivate User		
	3. Spoke steward or Administrator notifies actor of inactivation. 4. Spoke steward or Administrator changes actor status to inactivated. 5. System inactivates actor.		
Variations	1. Spoke steward or DWR Water PIE administrator notifies actor of inactivation.		
Exceptions / Business Rules	1. Only DWR Water PIE administrators can inactivate a DWR Water PIE administrator.  2. The list of registered users is constrained by the role and organization of the actor accessing the list. For example, a spoke steward will only see users identifying themselves as a part of the spoke steward's organization. A DWR Water PIE administrator will see all registered users.  3. A spoke cannot be active without an active spoke steward. If the actor attempts to inactivate the only spoke steward from a spoke, the system must prevent the action.		
Post Condition	Actor is inactivated in system.		
Attributes			
	<b>Attribute</b>	<b>Description</b>	<b>Unique</b>
	User ID	Self-created user ID name	Yes
	Email	Email address	Yes
	First name	Last Name of the Registered User	No
	Last Name	First name of the Registered User	No
	Status	Active or inactive user	No
	Role	Determines user's security and abilities	No

### Section 2.1.3.8: Perform Log Out

Name:	2.1.3.8 - Perform User Logout
Description	This use case begins when an actor has completed a session in Water PIE. This use case ends when the system logs an actor out.
Storyboards	Section 2.1.4.4: Access My Water Pie Account
Precondition/ Assumptions	1. Actor has successfully logged on to the system and interacted with Water PIE.
Actors	User, Registered User, Water PIE system
Steps	1. System displays means of logging out. 2. Actor selects log out function. 3. System logs actor out. 4. System notifies actor session has ended.
Variations	1. Actor closes Water PIE window. 1.1 System logs Water PIE actor out after the time out period has been

Name:	2.1.3.8 - Perform User Logout
	expended.
Exceptions/ Business Rules	
Post Condition	The system logs the actor out of the system.
Attributes	None

## SECTION 2.1.4: STORYBOARD DIAGRAMS

### Section 2.1.4.1: Accessing Water PIE without Authentication

When accessing Water PIE, the system will prompt actors with a login screen that will contain terms of use information as well as a menu to register or create a registration. In addition, if an actor forgets the actor's User ID or Password the actor can have the system send them a link to log in.

An actor is not required to log in or register as a user to use Water PIE.

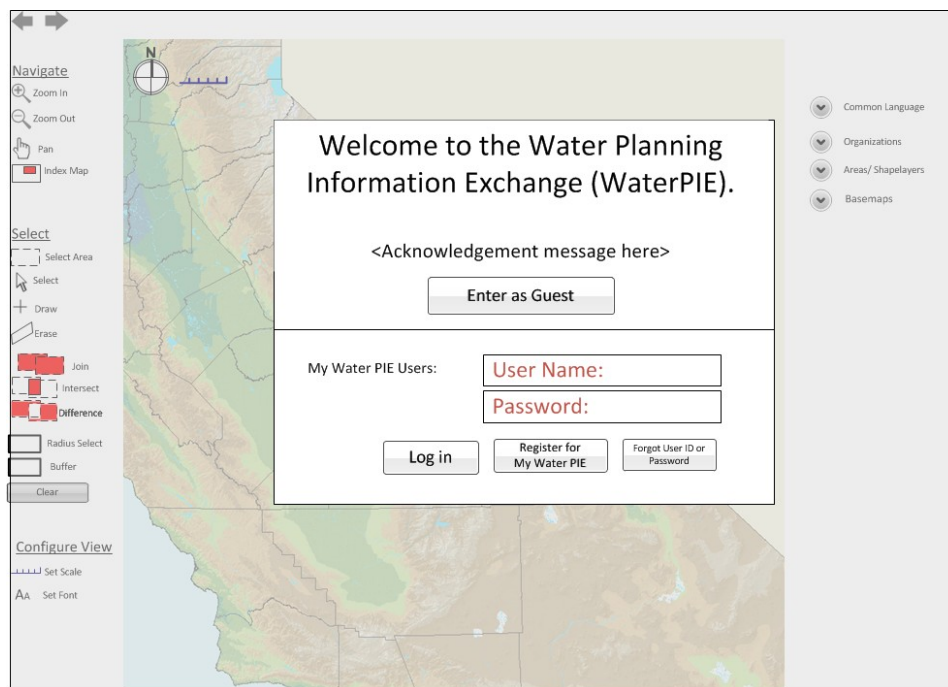
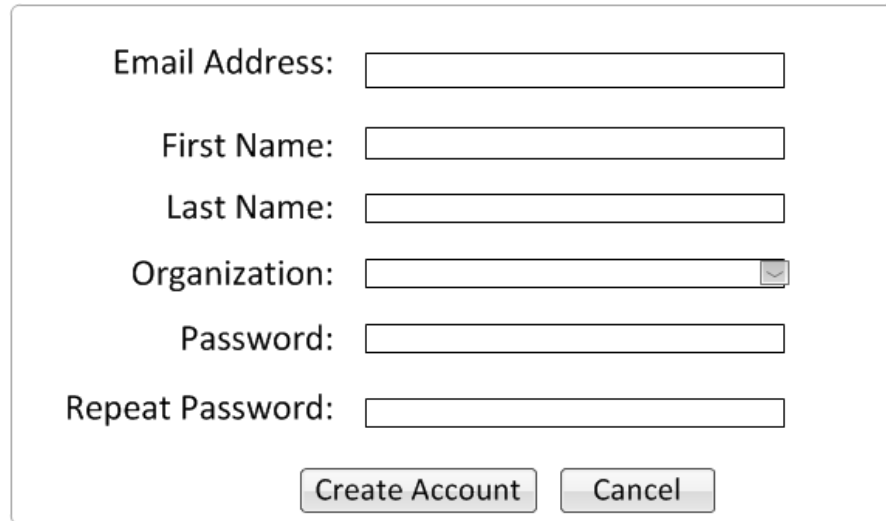


Figure 6. Water PIE Login Splash Screen

### Section 2.1.4.2: Register as a My Water PIE User

An actor may elect to register for My Water PIE, which allows the actor to save the configuration of a search, query or map configuration. Registering a My Water PIE account is also the first step in creating a spoke steward or DWR Water PIE administrator account. The actor can enter the registration information as seen in the diagram below.



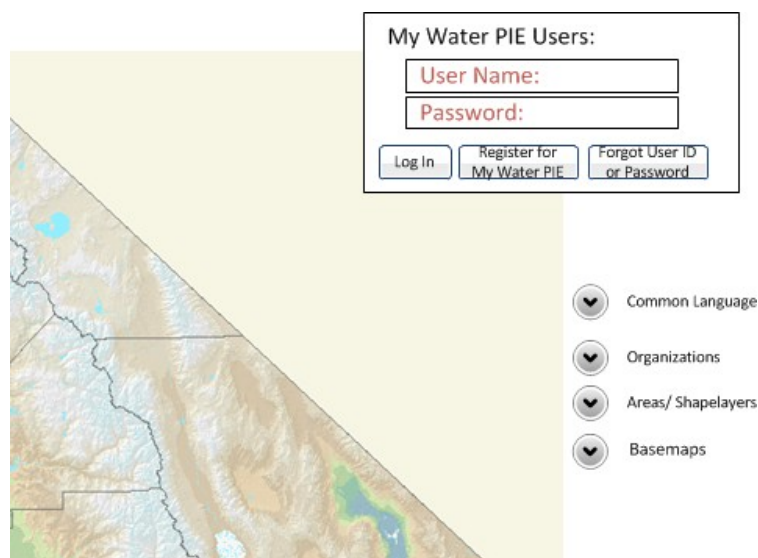
A registration form titled "Create Registered Account" with the following fields and buttons:

- Email Address:
- First Name:
- Last Name:
- Organization:
- Password:
- Repeat Password:
- 
- 

Figure 7. Create Registered Account

### Section 2.1.4.3: Log into Water PIE

An actor can choose to log into or register a My Water PIE account at any point during the actor's use of Water PIE. In addition, if an actor forgets the actor's User ID or Password the actor can have the system send them a link to log in.



A login form titled "My Water PIE Users:" with the following fields and buttons:

- User Name:
- Password:
- 
- 
- 

Below the login form, there is a map of a region and a list of settings with dropdown arrows:

- Common Language
- Organizations
- Areas/ Shapelayers
- Basemaps

Figure 8. Login for Registered Water PIE Users

#### Section 2.1.4.4: Access My Water PIE Account

Once logged in the actor can access the actor's My Water PIE account. A menu lists the actor's name currently logged into the system and allows the actor to sign out, change the actor's user profile, manage the actor's list of custom configurations, and request a role change.



Figure 9. Access My Water PIE

### Section 2.1.4.5: Change User Profile and Request Role

From the actor's My Water PIE account, the actor can change the profile information, change the password, and/or request to become a spoke steward or DWR Water PIE administrator. If the actor requests to become a spoke steward, the system requires the actor to provide a phone number, email address and identify the spoke or spokes. If the actor is in the Department of Water Resources, then the actor may request to become a DWR Water PIE administrator. The system will ask what division or office the actor belongs to before sending the request and verifies the users DWR email account. The system requires non-DWR users to enter their phone number, address and the spokes with which to be associated. .

User ID:

Email Address:

First Name:

Last Name:

Organization:

Old Password:

Change Password:

Repeat Password:

Phone Number

Street Address 1

Street Address 2

City  State

Spoke

Does not display when DWR Water PIE Administrator role is selected

Figure 10. Change a User Profile

### Section 2.1.4.6: Manage User Roles

The system defines user access by role and status. DWR Water PIE administrators and spoke stewards have the ability to change user roles and status for registered users within spoke steward's purview. DWR Water PIE administrators have access to all registered users in the system. In this case, the Water PIE Administrator may filter by organization. Spoke stewards can only view and edit registered users associated with the spoke steward's organization. The spoke steward's view will not have the ability to filter by organization.

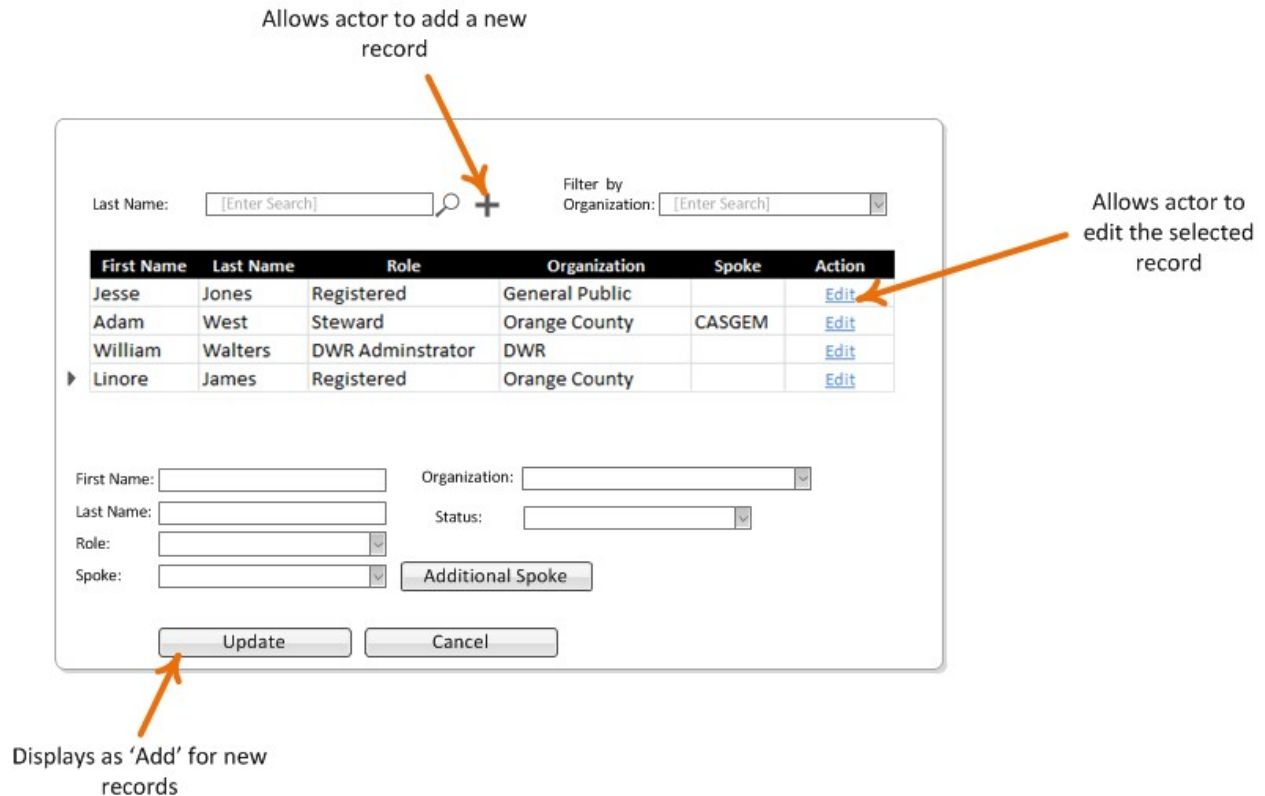


Figure 11. Managing User Roles

Once the registered user has been located, the actor can change a user's role to one of three primary roles:

1. Registered user (default)
2. Spoke steward
3. DWR Water PIE administrator

If a spoke steward or DWR Water PIE administrator assigns the role of spoke steward to a registered user, the spoke steward must also identify the spoke. Once set, the spoke steward will have access to the spoke registration for the spokes assigned to them.

A spoke steward or DWR Water PIE administrator may also change a registered user's status to:

1. Active (default)
2. Inactive

Only the DWR Water PIE administrator can create or edit another DWR Water PIE administrator's account.



## SECTION 2.2: MANAGING A SPOKE

This section will introduce process flow diagrams, use cases, and storyboards for the management of a Water PIE spoke. The spoke management is the process by which new data sources join Water PIE, set up spokes, and begin to share data with the public. The spoke management consists of initial spoke registration, loading and mapping of data elements to a common language, and adding spatial elements. Spoke management will involve time and personnel resources from both DWR and spoke organizations. If the system designer develops the process properly, the process will minimize DWR resource requirements.

This section includes the following subjects: configure spoke, view registration status, perform spoke test connection, approve/deny spoke, inactivate or decommission spoke, and copy spoke registration.

### SECTION 2.2.1: PROCESS FLOW DIAGRAM

The creation of a spoke begins when an interested party contacts the DWR Water PIE administrator to begin a dialog on spoke requirements. The interested party will use the system to notify the DWR Water PIE administrator of the potential new spoke. If the organization for the spoke already exists, the DWR Water PIE administrator will create the spoke, and then assign the role of spoke steward to the appropriate registered user from the organization. The system will notify the spoke steward that the spoke is available for registration. The spoke steward can then begin the process of registering the spoke in Water PIE. If the organization is not yet in the system, the DWR Water PIE administrator must add the organization. Once the organization is added to the list of organizations, DWR Water PIE administrator will notify the interested party and spoke registration can continue.

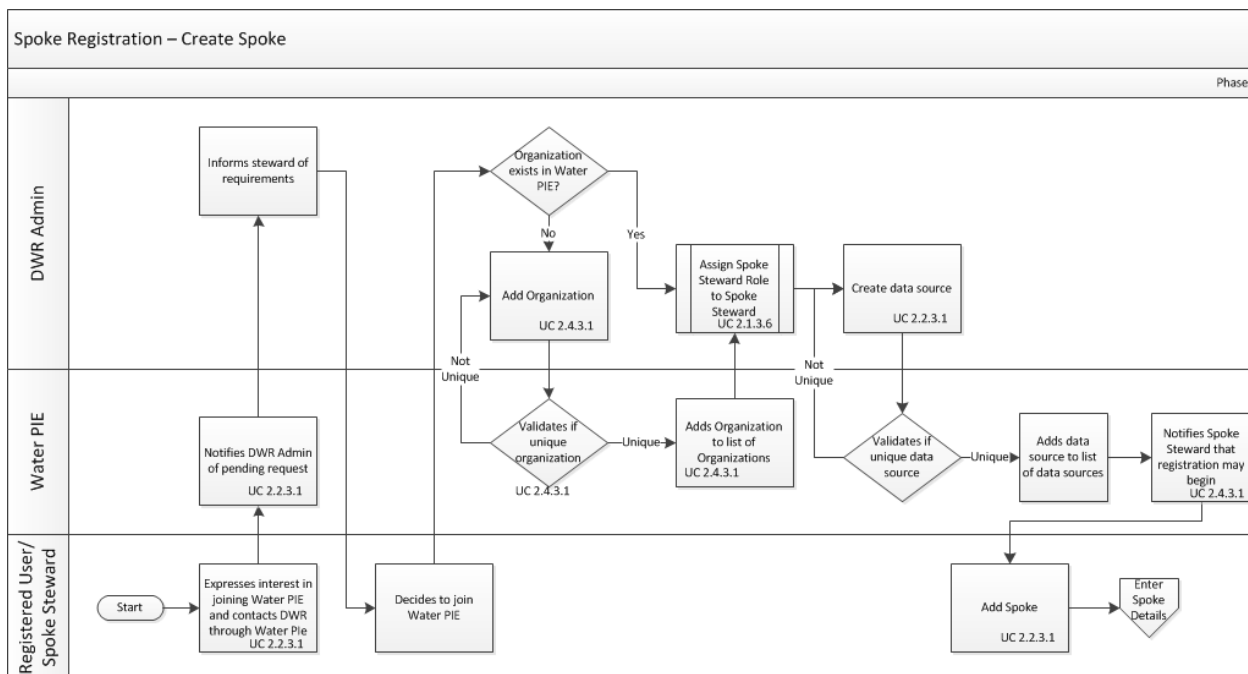


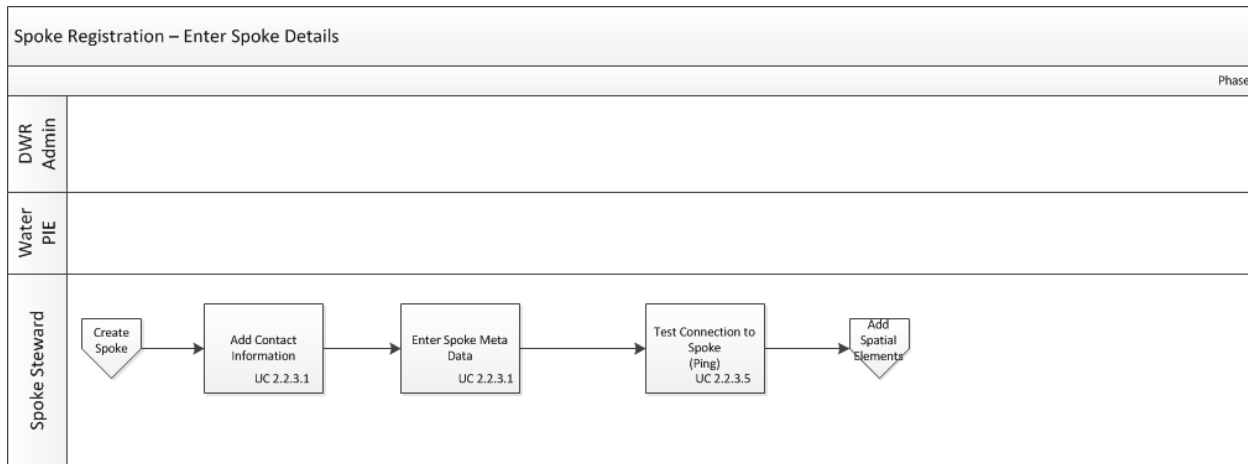
Figure 12. Spoke Registration Process – Create Spoke

When registering the spoke, the spoke steward must provide metadata about the data the spoke will be sharing. The spoke data may consist primarily of data, files, for example of water management plans, or

a combination of data and files. Water PIE users will be able to read the metadata so they can understand the quality and limitations of the data the spoke is sharing.

For information in a spoke's data to be useful, it must be consistent and searchable. To accomplish this, the spoke steward must map data elements from the spoke to the common language of Water PIE.

The spoke steward and DWR Water PIE administrator must test the connection to the spoke to ensure the systems can communicate with one another.

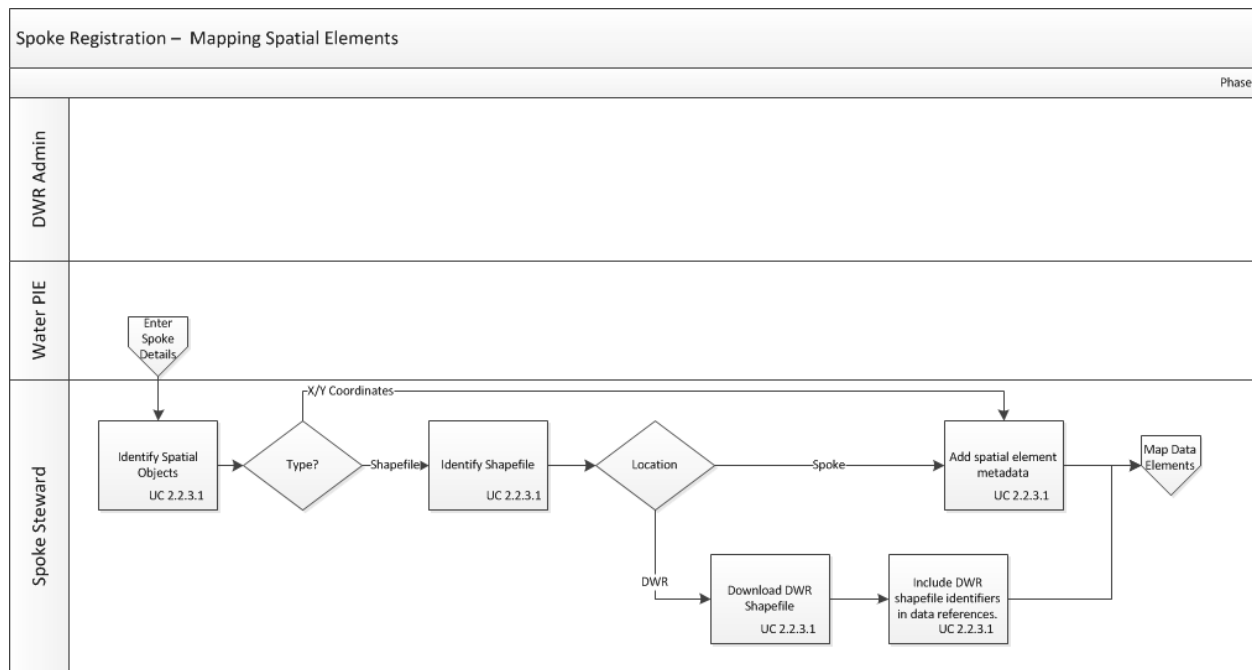


**Figure 13. Spoke Registration - Entering Spoke Information**

The process of registering a spoke begins by entering contact information and other spoke metadata.

Next, the spoke steward identifies the spatial elements. A spoke must associate all information/data with a spatial element. Spatial elements may be points, lines or polygons. If a spoke steward identifies the spatial elements as points, then the spoke must provide the (x,y) latitude and longitude with the data elements, or as a shapefile. If the spatial elements are lines or polygons, then the spoke will use a shapefile for the spatial elements. Water PIE may consume a shapefile through web services that the spoke steward maintains. Alternatively, the shapefile may be maintained by DWR. If a spoke steward wants to relate information/data to a shapefile maintained by DWR, then DWR must provide the spoke steward with the primary keys for the spatial elements. The spoke steward must use these primary keys when referring to the spatial elements. DWR will also provide the spoke steward with the names and labels for the spatial elements. The system will use these when displaying the spatial elements in Water PIE, and may help the spoke steward to assign spatial elements.

A data source may not reference spatial elements maintained by another data source (outside of DWR).

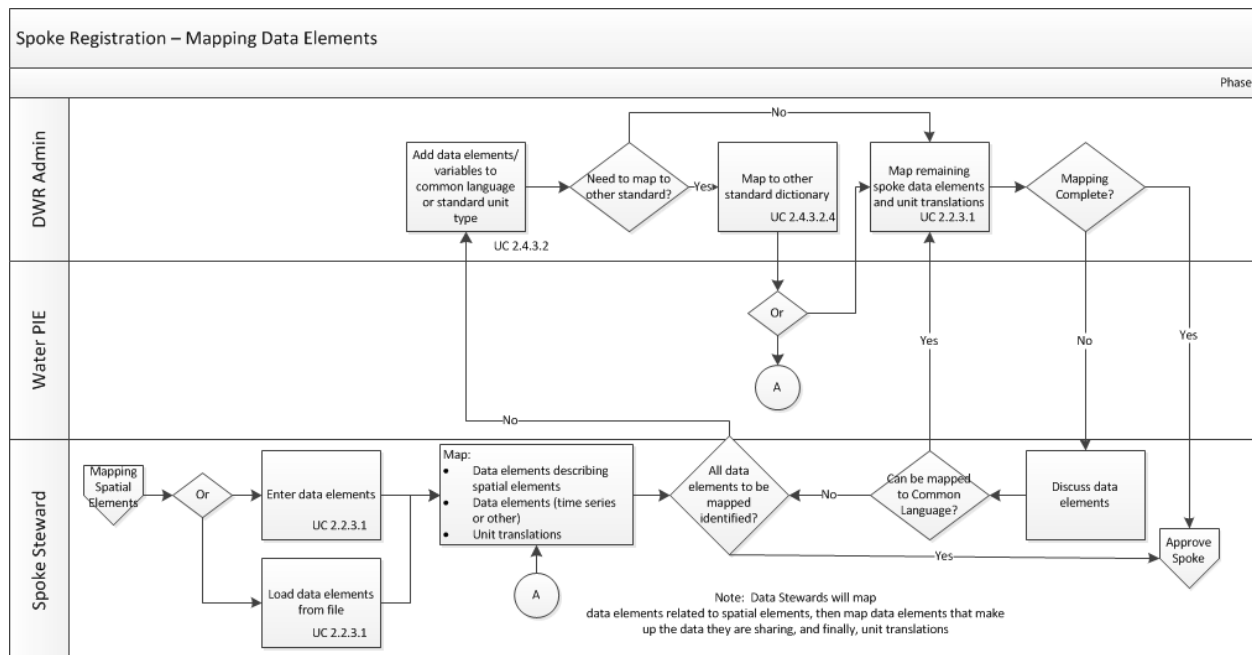


**Figure 14. Spoke Registration - Mapping Spatial Elements**

If the spoke steward maintains the spatial elements [(x,y) coordinates or a shapefile], then the spoke steward must complete the metadata for the spatial elements.

The next step in the process is to map the data to the common language, this includes spatial data elements, data elements, and related units. The common language provides a basis for searching for information across all spokes.

Spatial data elements are data elements that describe the spatial element, such as data about a well's location, depth, or construction. The spoke steward will first identify and map all spatial data elements to the common language.



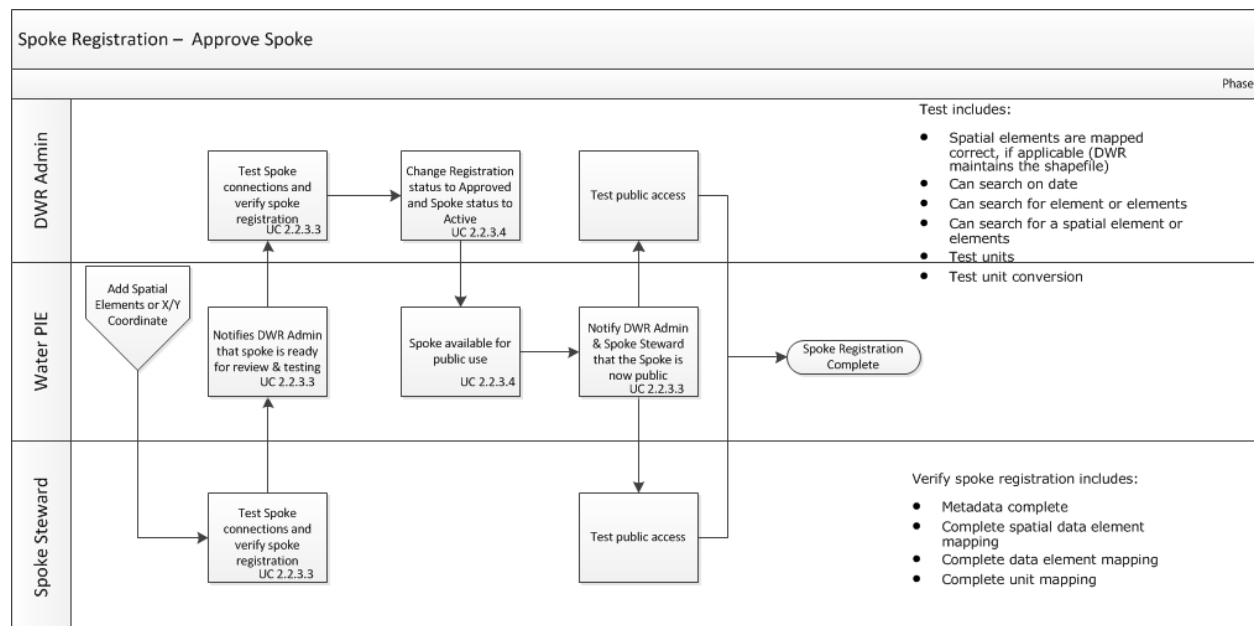
**Figure 15. Spoke Registration – Mapping Data Elements to Common Language**

A spoke will also share water-related data, such as time series measurements or files. These measurements are referred to as data elements. For example, a spoke may share the periodic groundwater measurements from the well referenced above (spatial element). All data elements must relate to a spatial element. A spoke steward must identify and map all data elements the spoke shares to the common language. Note: a spoke steward will map files to a dictionary of file data elements.

If a spoke steward can identify items in the common language that match all of the spatial data elements and data elements, then the spoke steward can proceed independently of DWR. If the spoke steward cannot map some of the data elements to the common language, then the spoke steward must contact the DWR Water PIE administrator. The DWR Water PIE administrator can add new common language elements and categories as needed to support the spoke and new data elements. Once DWR Water PIE administrator updates the common language, the spoke steward can complete the process of mapping the data elements.

Once the spoke steward has mapped all the data elements, the spoke steward must identify all possible units that the spoke will be sharing. Note: some spokes data may not include units, such as spokes that share documents. This step is similar to mapping data elements. The spoke steward can start the process, and possibly finish the process without DWR. If the spoke steward runs into difficulty, then the spoke steward must contact the DWR Water PIE administrator. The Water PIE administrator will add new units. The spoke steward can then complete the process.

Because the spoke may have more than one date and time field, the spoke steward must identify the field the system will use when searching based on date. The spoke steward must identify a single date field for the system to use with date searches. The spoke steward must properly format this field.

**Figure 16. Spoke Registration – Approving a Spoke**

The final step in the spoke registration process is approval of a spoke. This step verifies that all information is complete; water-related data is consistently and completely associated with spatial data, connections work properly, and test the performance of the exchange. The DWR Water PIE administrator

and spoke steward will test the connection between Water PIE and the spoke. If this connection succeeds and the spoke passes all connection tests, then DWR will change spoke status to active. Water PIE will then make the spoke available for public use. . The system will notify the spoke steward and the DWR Water PIE administrator that the spoke is now available to the public. DWR and the spoke steward will conduct the final test ensure public access to the spoke works properly.

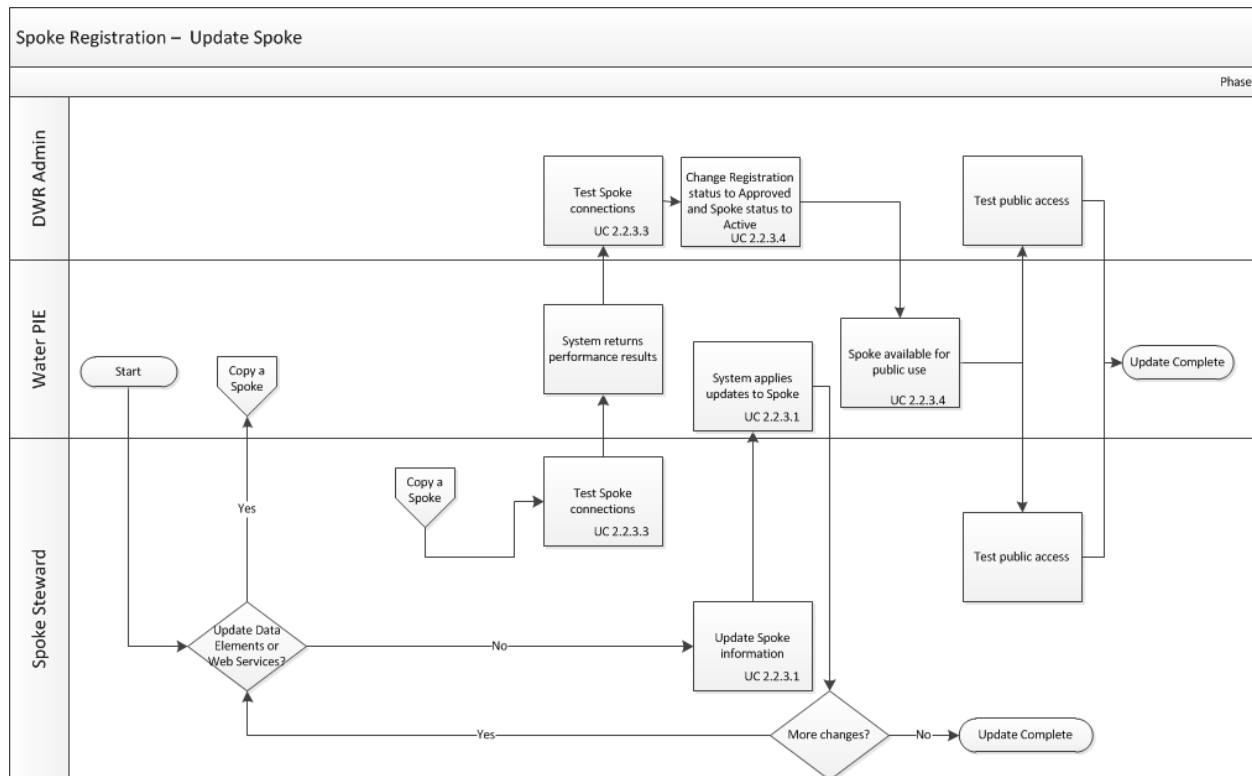


Figure 17. Update a Spoke

Updating a spoke can consist of updates to the connection or updates to the data itself. The spoke steward can update the active spoke's information such as changes to metadata or contracts without creating an offline version of the spoke.

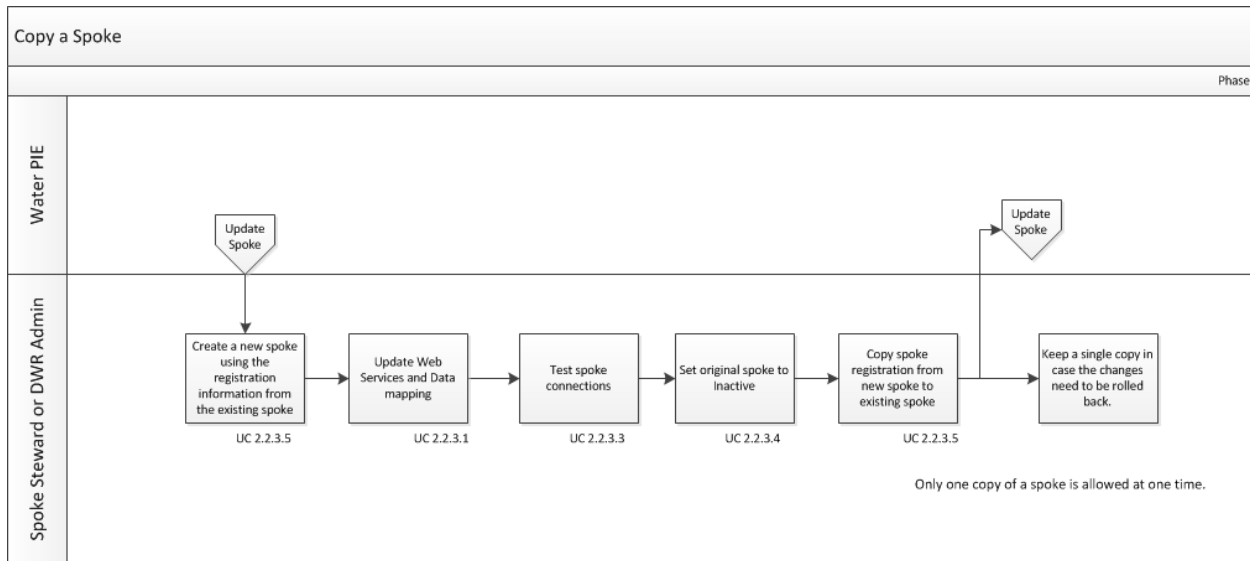


Figure 18. Copy a Spoke

If the spoke steward or the DWR Water PIE administrator requires changes to the data or connection, the spoke steward and DWR Water PIE administrator will copy the spoke. Once DWR Water PIE administrator and the spoke steward make appropriate changes, they must test and approve the connection. If changes and updates are acceptable, the DWR Water PIE administrator can replace the connection with the new one, and delete the one that is not used.

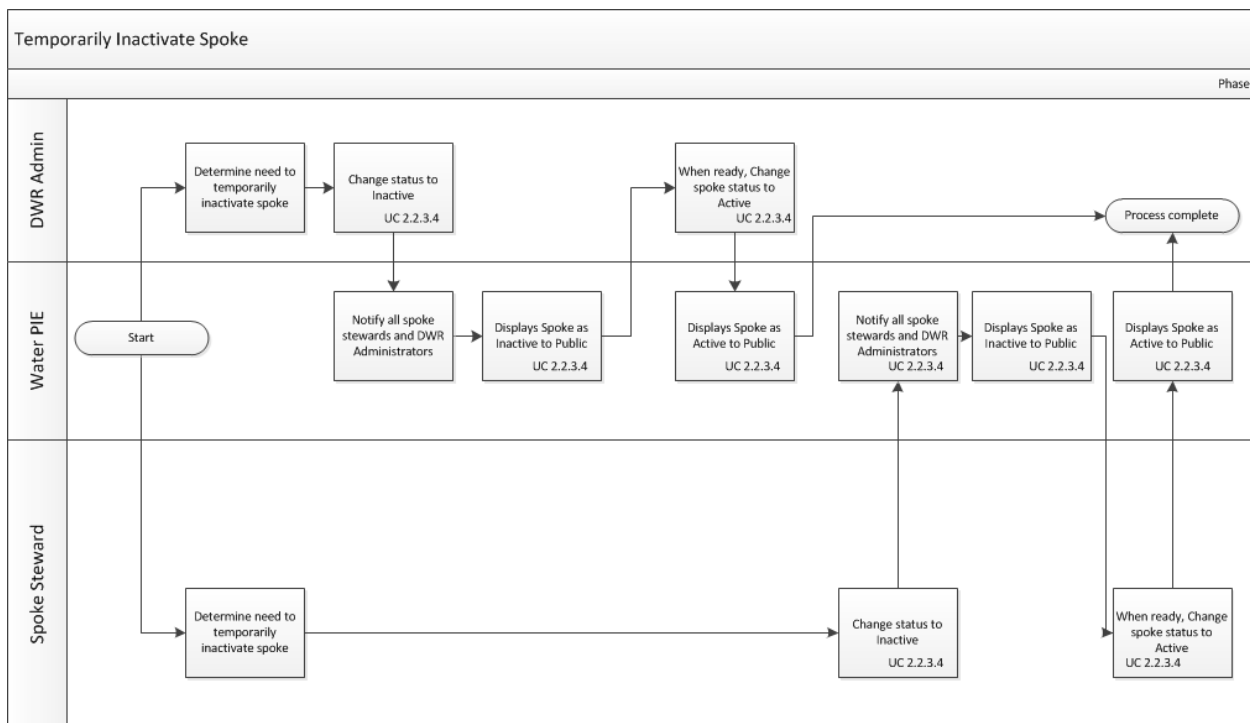


Figure 19. Inactivate a Spoke

The spoke steward or DWR can determine if a spoke needs to be temporarily inactivated. If a spoke needs to be temporarily inactivated, the spoke steward can change the status to inactive. The system will display the spoke as inactive to all users. The spoke steward or the DWR Water PIE Administrator can then change the status of the spoke back to active. If DWR determines the need to inactivate a spoke, DWR will first notify the spoke.

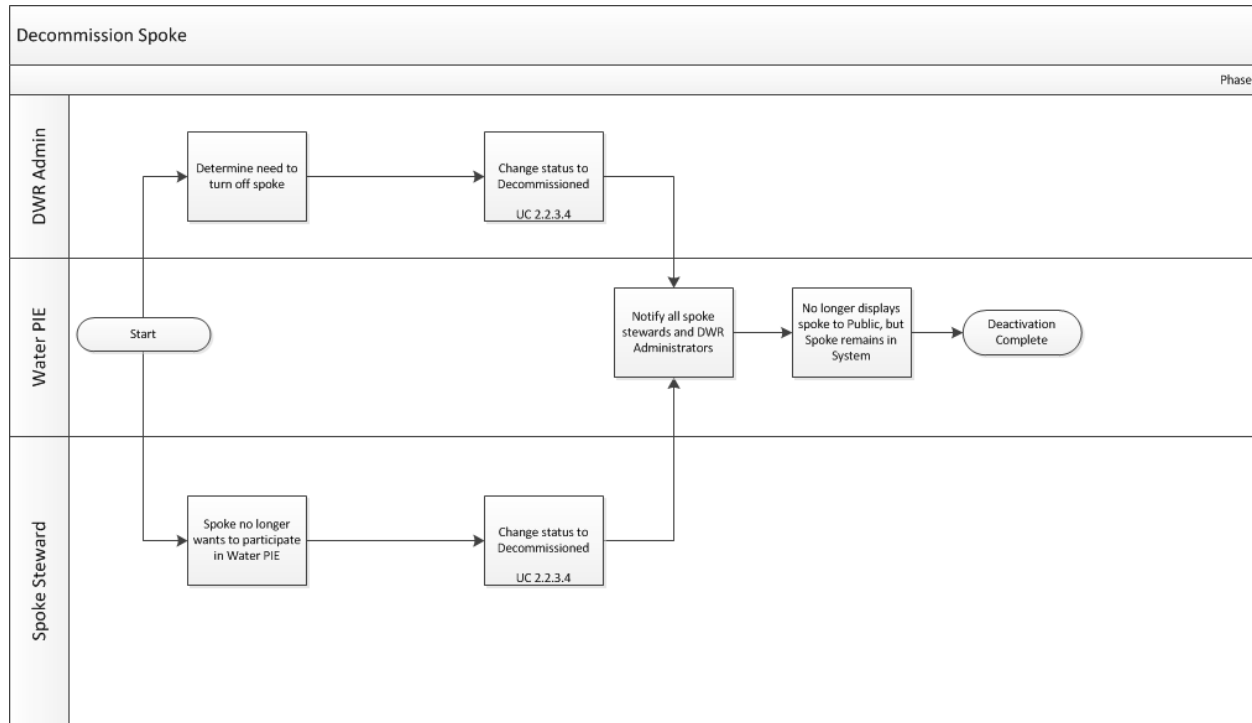
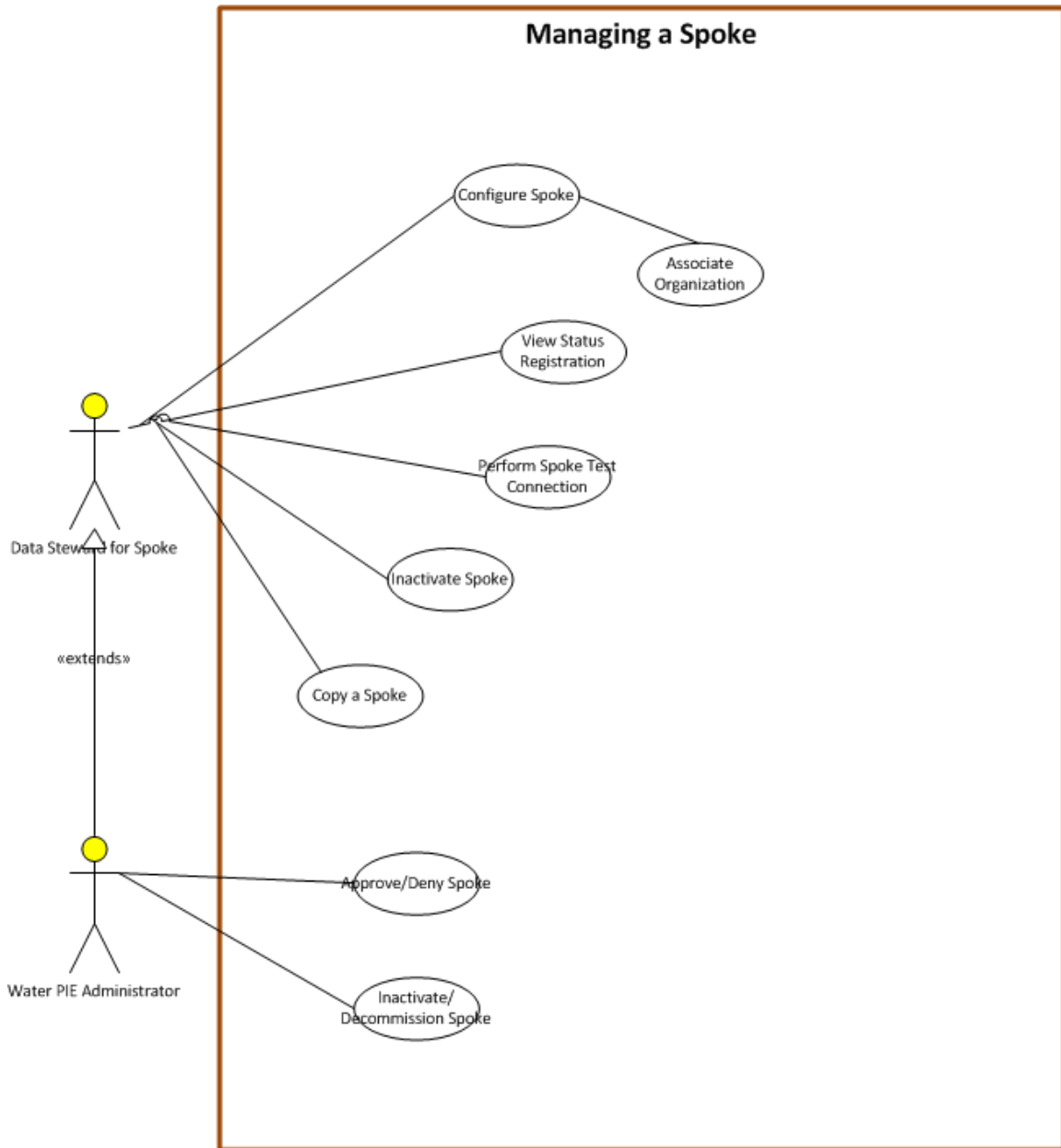


Figure 20. Decommission a Spoke

A spoke can also be decommissioned. Decommissioning a spoke will remove the spoke from public view. Decommissioning a spoke begins either when a spoke no longer wants to participate in Water PIE or DWR determines the need to remove a spoke from the system. The spoke steward or DWR Water PIE administrator may change the spoke's status to decommissioned. Water PIE will no longer display the decommissioned spoke in the list of spokes for public access.

## SECTION 2.2.2: UML

The Managing a Spoke Unified Modeling Language Diagram below depicts the use cases included in the User Administration Process described in section 2.2.3.



**Figure 21. Managing a Spoke Unified Modeling Language Diagram**



## SECTION 2.2.3: USE CASES

## Section 2.2.3.1: Configure Spoke

The process for registering a spoke includes a series of steps. The diagram below outlines the registration process.

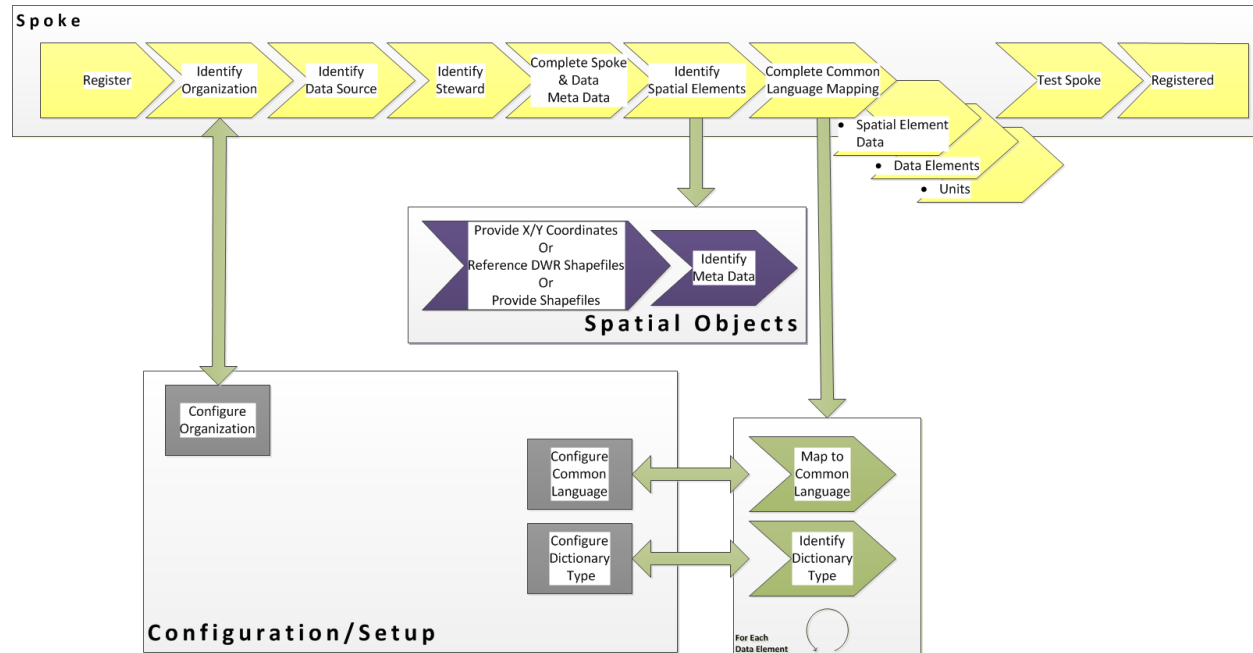


Figure 22. Spoke Registration Flow

Name	2.2.3.1 Configure Spoke
Description	<p>This use case describes complete process for registering a spoke. Actor may Create/Read/Update/Delete a spoke. This function uses the CRUD use case format found in section 2.6.</p> <p>This use case outlines the basic steps associated with adding a spoke and identifies the business rules associated with configuring the spoke.</p> <p>Design approach should take into consideration that creating a spoke is a complicated, technical, and critical process.</p>
Storyboards	<p>Section 2.2.4.1: Enter Spoke Information</p> <p>Section 2.2.4.2: Add Spoke Contacts</p> <p>Section 2.2.4.3: Add Spatial elements</p> <p>Section 2.2.4.4: Map Spoke Data Elements</p> <p>Section 2.2.4.5. Map Units</p> <p>Section 2.2.4.7: View History</p>
Precondition /	Actor has successfully logged in to Water Pie.

Name	2.2.3.1 Configure Spoke
Assumptions	DWR has created a spoke steward for the spoke.
Actors	Spoke steward (Primary Actor) DWR Water PIE administrator (Secondary Actor)
Steps	<ol style="list-style-type: none"> <li>1. Actor requests to register a spoke through Water PIE.</li> <li>2. System notifies DWR Water PIE administrator of pending spoke registration. <ol style="list-style-type: none"> <li>2.1. If the organization and data source exist, move to step 3.</li> <li>2.2. If the organization or data source does not exist, move to Use Case 2.4.3.1: Configure Organization, then move to step 3.</li> </ol> </li> <li>3. System notifies Spoke Steward that the spoke is ready for registration.</li> <li>4. System retrieves data specific list of values.</li> <li>5. Actor adds spoke.</li> <li>6. System prompts actor for spoke metadata: <ol style="list-style-type: none"> <li>6.1. Name or Alias of spoke being registered</li> <li>6.2. Spoke contact(s) and contact information</li> <li>6.3. Connection Settings</li> </ol> </li> <li>7. System prompts actor for data metadata. <ol style="list-style-type: none"> <li>7.1. Actor enters metadata the spoke is sharing.</li> </ol> </li> <li>8. Actor provides spoke information. <ol style="list-style-type: none"> <li>8.1. To complete the information tab the actor can data enter the information and may upload a document that provides additional information.</li> <li>8.2. The actor can add, update or delete any document uploaded to the spoke information (See UC Patterns CRUD in section 2.6).</li> </ol> </li> <li>9. System tests connection by performing Use Case Perform Spoke Test Connection with Spoke Registration.</li> <li>10. System prompts actor for spatial elements source and displays three selections: Provide (x,y) Coordinates, Reference DWR, or Provide Shapefile. <ol style="list-style-type: none"> <li>10.1. If the spatial elements reference DWR, then the spoke must pass an additional test to ensure that all data elements are consistently and completely associated with the proper spatial elements. See Use Case 2.2.3.3 Perform Spoke Test. Connection</li> </ol> </li> <li>11. Actor provides metadata for spatial elements if the spoke provides the shapefile or (x,y) coordinates. <ol style="list-style-type: none"> <li>11.1. To complete the metadata the actor must data enter the required information. The actor may also upload a document that provides additional information.</li> <li>11.2. The actor can add, update or delete any document uploaded to the spoke information (See UC Patterns CRUD in section 2.6).</li> <li>11.3. Actor identifies IDs and labels for spatial data elements.</li> </ol> </li> <li>12. System prompts actor for spoke's spatial element data elements. <ol style="list-style-type: none"> <li>12.1. Actor maps spatial element data elements to the common language.</li> <li>12.2. System will prompt actor to identify the common language for each spatial data element.</li> </ol> </li> </ol>

Name	2.2.3.1 Configure Spoke
	<p>12.3. Actor provides common language mapping for each spatial data element.</p> <p>13. System prompts actor for spoke data elements.</p> <p>13.1. Actor maps data element to the common language.</p> <p>13.2. System will prompt actor to identify the common language for each data element.</p> <p>13.3. Actor provides common language mapping for each data element.</p> <p>14. Actor maps Units.</p> <p>15. Actor maps date field.</p> <p>16. Actor tests spoke connection by performing <u>Use Case Perform Spoke Test Connection with Spoke Registration Status</u>.</p> <p>17. DWR Administrative activates the spoke if the test is successful.</p> <p>18. System notifies DWR Water PIE administrator and spoke steward that spoke is now available to the public.</p>
Variations	<p>In Error: Reference source not found:</p> <ul style="list-style-type: none"> <li>• If Organization does not exist, add Organization (see use case 2.4.3.1).</li> <li>• If Data source does not exist, add Data Source (see use case 2.4.3.1).</li> </ul> <p>In Actor maps data element to the common language. if Common Language categories or elements do not exist, add Common Language categories or elements (see use case 2.4.3.2).</p> <p>In Actor maps data element to the common language. if Dictionary Type does not exist, actor adds Dictionary Type (see use case 2.4.3.2).</p> <p>In 10 (spatial data elements) or 11 (data elements), if the spoke is using a common standard dictionary that has been added to Water PIE (see use case 2.4.3.2), the actor can request the system to perform the mapping once the data elements are added.</p> <ol style="list-style-type: none"> <li>1. Actor selects common language dictionary.</li> <li>2. System allows actor to select dictionary.</li> <li>3. Actor triggers mapping.</li> <li>4. System maps all data elements that match the dictionary selected and identifies the data elements that do not match.</li> <li>5. DWR adds data elements to the common language.</li> <li>6. Actor maps the remaining data elements to the common language dictionary.</li> </ol> <p>In 11, Actor maps files and file related data to common language</p> <ol style="list-style-type: none"> <li>1. Actor selects file from common language dictionary.</li> <li>2. Actor maps files.</li> <li>3. Actor maps data elements associated with the files.</li> </ol>

Name	2.2.3.1 Configure Spoke		
	<p>4. Return to step 13.</p> <p>In 8, if Actor decides to reference a DWR Shape files</p> <ol style="list-style-type: none"> <li>1. System will display a list of available DWR shapefiles from which to select.</li> <li>2. Actor selects an item from the list.</li> <li>3. System shall provide primary keys, names and labels of spatial elements to actor.</li> <li>4. Actor maps data elements to spatial elements.</li> <li>5. System reference the DWR shapefile in the spoke registration.</li> </ol> <p>Actor does not complete spoke registration:</p> <ol style="list-style-type: none"> <li>1. Actor selects save.</li> <li>2. System saves spoke registration.</li> </ol>		
Exceptions / Business Rules	<ol style="list-style-type: none"> <li>1. The spoke steward cannot update the spoke's data elements or mapping or connection once set.</li> <li>2. Changes to data elements or mapping require DWR review, testing and approval before the system makes the spoke available to the public.</li> </ol>		
Post Condition	The system stores the updated spoke.		
Attributes			
	<b>Attribute</b>	<b>Description</b>	<b>Unique</b>
	Data Metadata:		
	Update Frequency	How often is the data updated or changed	
	Temporal Scale Start Date	Date dataset variables begin	
	Temporal Scale End Date	Date dataset variables end	
	Temporal Scale Description	What is the data about	
	Spatial Reference Description	Datum and projection information	
	Spatial Accuracy	Accuracy of spatial data	
	Methodology	Methods used to collect data	
	Use Constraints/Liabilities	Constraints for use	
	Purpose	Why was the dataset created	
	Date Published	Date dataset made available to public	
	Spoke Meta Data:		
	Spoke Description	What is the spoke	
	Date Created	Date the data was collected, gathered or acquired	
	Use Constraints	Possible limitations with the dataset	
	Spoke History	Explanation of changes made to Spoke over time	
	Contact First Name	First name of the Spoke Contact	
	Contact Last Name	Last Name of the Spoke Contact	

Name	2.2.3.1 Configure Spoke		
	<b>Attribute</b>	<b>Description</b>	<b>Unique</b>
	Data Metadata:		
	Contact Email address	Email Address of the Spoke Contact	
	Contact Organization	Organization of the Spoke Contact	
	Contact Address	Address of the Spoke Contact	
	Contact Phone Number	Phone number of the spoke contact	
	Contact for/Remarks	General comments about Spoke Contact	
	Spatial Elements and Spatial Element Metadata:		
	Stored	DWR or Spoke	
	Name	Name of Shapefile	Yes
	Abstract	Description of the shapefile	
	Date	Date dataset was created	
	Date Published	Date dataset was released to the public	
	Update Frequency	How often is the data updated or changed	
	Temporal Scale Start Date	Date dataset variables begin	
	Temporal Scale End Date	Date dataset variables end	
	Temporal Scale Description	What is the data about	
	Spatial Reference Description	Datum and projection information	
	Spatial Accuracy	Accuracy of spatial data	
	Methodology	Methods used to collect data	
	Use Constraints	Possible limitations with the dataset	
	ISO Code	ISO category code, may be more than one	
	Data Elements:		
	Common Language Element	Matching Common Language data element	
	Data Element description	Data element name from Spoke	
	Data Element description	Description of data element	
	Variable	Variable in original data table	
	Unit Type	Table reference for data element	

### Section 2.2.3.2: View Status Registration

Name	2.2.3.2 Perform View Spoke Status Registration
Description	This use case describes the process for viewing the status of a spoke registration and history.
Storyboards	Section 2.2.4.8: Manage Spoke Status

Name	2.2.3.2 Perform View Spoke Status Registration
Precondition / Assumptions	A spoke has been configured and waiting for approval.
Actors	Spoke steward (Primary Actor) DWR Water PIE administrator (Secondary Actor)
Steps	<ol style="list-style-type: none"> <li>1. Actor requests to view the status of a spoke history.</li> <li>2. Perform UC Pattern: Search.</li> <li>3. Perform UC Pattern: View List.</li> <li>4. Actor requests to view detailed item.</li> <li>5. Perform UC Pattern: View Detail [Actor].</li> </ol>
Variations	In Perform UC Pattern: View List <ol style="list-style-type: none"> <li>1. Actor decides not to view detail.</li> </ol>
Attributes	None
Exceptions / Business Rules	
Post Condition	The system displays the history of spoke. The system displays the date and time each step occurred, in descending order.

### Section 2.2.3.3: Perform Spoke Test Connection

Name	2.2.3.3 Perform Spoke Test Connection
Description	This use case describes the process for testing the connection, performance and spatial element mapping between spatial elements and data.
Storyboards	Section 2.2.4.8: Manage Spoke Status
Precondition / Assumptions	A spoke is ready to be tested.
Actors	Spoke steward (Primary Actor) DWR Water PIE administrator (Secondary)
Steps	<ol style="list-style-type: none"> <li>1. Actor requests to test spoke connection.</li> <li>2. System tests connection and displays connection results back to actor.</li> <li>3. System returns results of tests.</li> <li>4. Actor tests spoke.</li> <li>5. Actor indicates testing step is complete.</li> <li>6. System notifies DWR Water PIE Administrator that spoke is ready for review and testing.</li> <li>7. DWR Water PIE administrator requests to test spoke connection.</li> </ol>

Name	2.2.3.3 Perform Spoke Test Connection
	<ol style="list-style-type: none"> <li>8. System tests connection data by pinging the Spoke and displays connection results back to actor.</li> <li>9. DWR Water PIE administrator tests spoke.</li> <li>10. If spoke test is successful, DWR Water PIE administrator changes status to Approved, move to Use Case 2.2.3.4. Manage Spoke Status.</li> </ol>
Variations	<p>In 2 &amp; 7, Pre-Approval Performance Test by System</p> <p>When the spoke registration is ready for review and approval by the spoke administrator, then system tests data retrieval by executing a query from data source displays connection results back to actor. The following tests are performed to determine general spoke/connection performance and set indicators for estimated result display during searching. The following queries will be triggered and logged as indicators:</p> <ol style="list-style-type: none"> <li>1. All spatial elements in the State.</li> <li>2. All spatial elements in a single county.</li> <li>3. All information about all spatial elements in a single county. (Same county as in Test 2)</li> <li>4. The entire dataset</li> <li>5. All data in in a single county. (Same county as in Test 2)</li> <li>6. All data in a single county for a single year. (Same county as in Test 2)</li> <li>7. Only one parameter in California. Done if the data set contains multiple data elements for a single spatial element, otherwise disregard test.</li> <li>8. One parameter in a single county for a single year. (Same county as in Test 2. Same year as in Test 6.)</li> </ol> <p>Pre-Approval tests by actor</p> <ol style="list-style-type: none"> <li>1. Actor tests: <ol style="list-style-type: none"> <li>1.1. Spatial elements display on map correctly.</li> <li>1.2. System has all spatial elements mapped correctly, if applicable (DWR maintains the shapefile).</li> <li>1.3. Can search on date</li> <li>1.4. Can search on a date range</li> <li>1.5. Can search for element or elements</li> <li>1.6. Can search for a spatial element or elements</li> <li>1.7. Can search on a value for an element</li> <li>1.8. Test units</li> <li>1.9. Test unit conversion</li> </ol> </li> <li>2. Actor verifies: <ol style="list-style-type: none"> <li>2.1. Metadata complete</li> <li>2.2. Complete spatial data element mapping</li> </ol> </li> </ol>

Name	2.2.3.3 Perform Spoke Test Connection
	<p>2.3. Complete data element mapping</p> <p>2.4. Complete unit mapping</p> <p>In Step 2 &amp; 7, Spoke Spatial Element Mapping to DWR maintained Shapefile (from Section 2.2.3.1 Configure Spoke: Step 10.1)</p> <ol style="list-style-type: none"> <li>1. System validates each data record in spoke data is mapped to a valid spatial element in DWR shapefile.</li> <li>2. System reports results to Actor. <ol style="list-style-type: none"> <li>2.1. Error detected <ol style="list-style-type: none"> <li>2.1.1. Actor corrects data.</li> <li>2.1.2. Actor triggers test again. See step 1 of variation.</li> </ol> </li> <li>2.2. No error detected.</li> </ol> </li> </ol>
Attributes	None
Exceptions / Business Rules	
Post Condition	System displays connection result back to the actor.

#### Section 2.2.3.4: Manage Spoke Status (Approve/Deny/Inactivate/Decommission)

Name	2.2.3.4 Manage Spoke Status (Approve/Deny/Inactivate/Decommission)
Description	This use case describes the process of managing a spoke status. This includes approving or denying a spoke request and inactivating or decommissioning a spoke.
Storyboards	Section 2.2.4.8: Manage Spoke Status
Precondition / Assumptions	A spoke has been created.
Actors	<p>Spoke steward (Primary Actor)</p> <p>DWR Water PIE administrator (Secondary Actor)</p>
Steps	<ol style="list-style-type: none"> <li>1. Actor performs <u>2.C UC View Registration Status</u></li> <li>2. Actor successfully updates status of spoke, see UC Pattern: Set Status [Spoke].</li> <li>3. System notifies spoke steward and DWR Water PIE administrator regarding new status of spoke.</li> </ol>
Variations	<p>In 2, Actor selects inactive or decommission status.</p> <ol style="list-style-type: none"> <li>1. System prompts user for reason for change of status.</li> </ol>



Name	2.2.3.4 Manage Spoke Status (Approve/Deny/Inactivate/Decommission)		
	<div>2. Actor enter reason for change.</div> <div>3. Return to step 3.</div>		
Exceptions / Business Rules	<div>1. Only the DWR Water PIE Administrator can set the status to Approved from Pending Approval.</div> <div>2. A status of inactive displays the spoke as inactive to all users and does not allow the actor to select the spoke for queries.</div> <div>3. A status of decommissioned no longer displays the spoke to users.</div>		
Post Condition	Spoke status has been changed		
Attributes			
		Attribute	DescriptionUnique
		Status	Active or inactive spoke
		Spoke Name	Spoke being managed
		Deactivated By:	Admin or Steward changing spoke status
		Reason	Why spoke status is being altered

#### Section 2.2.3.5: Copy Spoke Registration

Name	2.2.3.5 Copy Spoke Registration
Description	This use case describes the process of creating a spoke with registration information from another spoke. This allows a spoke to change the connection or data mapping with minimal interruption to users.
Storyboards	Section 2.2.4.9: Copy a spoke
Precondition / Assumptions	A spoke registration exists for a spoke.
Actors	Spoke steward
Steps	1. Actor accesses spoke registration, see use case pattern Search. 2. Actor selects spoke. 3. Actor triggers copy a spoke. 4. System displays Copy a Spoke window. 5. Actor selects spoke to copy. 6. Actor selects either to create a new spoke or copy to replace an existing spoke. 7. If copy to a new spoke, Actor enters new spoke name. 8. Actor triggers the copy of spoke registration information.
Variations	In 6 1. Actor selects to replace the existing spoke with the updated copy. 2. Actor triggers the copy of spoke registration information.

Name	2.2.3.5 Copy Spoke Registration		
	3. System displays a system message asking the actor to confirm the replacement of the existing spoke registration information.		
Exceptions / Business Rules	1. The Actor's role determines the list of available spoke displayed. The system will display only spoke for which the actor is spoke steward. 2. Only one spoke copy may exist at a time.		
Post Condition	Spoke registration information is copied from one spoke to another.		
Attributes			
		<b>Attribute</b>	<b>Description Unique</b>
		Spoke Name From	Spoke being copied from
		Spoke Name To	Spoke being copied over

## SECTION 2.2.4: STORYBOARD DIAGRAMS

### Section 2.2.4.1: Enter Spoke Information

Entering spoke information is the first step in registering a spoke. Spoke stewards or DWR Water PIE administrators may add spokes to a data source, and add or edit the basic description of the data shared through Water PIE. Spoke stewards and DWR Water PIE administrators can view the registration information through a series of tabs.

The spoke steward and DWR Water PIE administrator can add or select the spoke information, which they want to edit. The actor completes the information tab, then moves on to the contacts tab, or the tab of the actor's choice.

To complete the information tab the actor can enter the information or upload a freeform document providing the information, such as a PDF or MS Word. A spoke steward must be able to add, update, or delete any document uploaded to the spoke information.

Organization Name: DWR

Data Source: CASGEM

Register New Organization

Edit Organization & Data Sources

Register New Spoke

Copy Spoke Registration Information

Allows user to add new spoke

Spoke	Status	Action
Ground Water Measurements	Registered	Edit
Well Information	Pending	Edit

Allows user to edit spoke

Update Cancel Delete

Info Contacts Spatial Objects Data Elements History

Spoke Name: Ground Water Measurements Status: Approved

Test Connection

Spoke Description:

Date Created: Update Frequency:

Date Published:

Temporal Scale:

Start Date: End Date:

Purpose:

Temporal Scale Description:

Upload Temporal Scale

Spatial Reference Description including projection, datum, what the shapefile represents:

Upload Spatial Reference

Spatial Accuracy Description:

Upload Spatial Accuracy

Methodologies for Collection:

Upload Methodologies File

Use Constraints/Liabilities:

Upload Constraints File

Figure 23. Enter Spoke Information

### Section 2.2.4.2: Add Spoke Contacts

Spoke stewards and DWR Water PIE administrators can access other menus to edit information such as contacts. Contacts (spoke stewards) can be added, edited, or deleted. Multiple contacts can exist for a single spoke or organization. Users with the role of spoke steward for the spoke automatically display in the list of contacts. The actor may also add a contact that is not a spoke steward.

Organization Name:

Data Source:

Spoke	Status	Action
<a href="#">Ground Water Measurements</a>	Registered	<a href="#">Edit</a>
<a href="#">Well Information</a>	Pending	<a href="#">Edit</a>

Info | **Contacts** | Spatial Objects | Data Elements | History |

Contact	Phone Number	Email Address	Address	Spoke Steward	Edit	Action
John Doe	916-546-4368	<a href="mailto:john@jdoe.com">john@jdoe.com</a>	1212 West Street Sacramento, CA 95833	Yes	<a href="#">Open Contact</a>	<a href="#">Remove</a>
Jesse Jones	549-546-4462	<a href="mailto:jesse@jones.com">jesse@jones.com</a>	1256 South Street Folsom, CA 95555	No	<a href="#">Open Contact</a>	<a href="#">Remove</a>

Spoke Stewards for Spoke automatically display in the list, but can add a contact that is not a Spoke Steward

First Name:

Last Name:

Email Address:

Organization:

Phone Number:

Contact for/Remarks:

Address: Line 1   
Line 2

City  State

Zip

Figure 24. Add Spoke Contacts

**Section 2.2.4.3: Add Spatial Elements**

Spoke stewards will identify spatial elements for Water PIE for display on the map. All shapefiles are required to have metadata.

Spatial elements may be points, lines or polygons. If a spoke steward identifies the spatial elements as points with the x and y coordinate provided in the data, rather than a shapefile, then the spoke must provide the (x,y) with the data elements. If the spatial elements are points, lines or polygons contained in a shapefile, then the spoke will use a shapefile for the spatial elements. The spoke steward may maintain the shapefile while Water PIE consumes it through a web service. Alternatively, DWR may maintain the shapefile. In this later case, DWR must provide the spoke steward with the primary keys for the spatial elements. Then the spoke must use these primary keys when referring to the spatial elements. DWR will also provide the spoke steward with the names and labels for the spatial elements.

A non-DWR spoke steward cannot to edit the metadata for DWR shapefiles. A spoke steward may download a DWR shapefile, modify it, and maintain the shapefile at the spoke.

Organization Name:

Data Source:

Spoke	Status	Action
<a href="#">Ground Water Measurements</a>	Registered	<a href="#">Edit</a>
<a href="#">Well Information</a>	Pending	<a href="#">Edit</a>

Info | Contacts | Spatial Objects | Data Elements | History

X/Y Coordinates: ☐

Display: ☒ DWR Shapefiles ☐ Source Shapefiles ☐ Both

Stored	Name	Description	Action
DWR	Counties	1996 Countie	<a href="#">[Edit Metadata]</a>
Source	Basins	Basins	<a href="#">[Edit Metadata]</a>
Source	Lakes	Lakes	<a href="#">[Edit Metadata]</a>

Stored:

Name:

Abstract:

Date:   Update Frequency:

Date Published:   Basemap? ☒

Temporal Scale:

Start Date:   End Date:

Temporal Scale Description:

Spatial Reference Description including projection, datum, what the shapefile represents:

Spatial Accuracy Description:

Methodologies for Collection:

Use Constraints/Liabilities:

ISO Categories:

If checked page stored & shapefile not displayed below

If DWR is selected the user can select the shapefile from the list of shapefiles provided by DWR and the meta data is completed by the system and is view only.

Figure 25. Add Spatial Elements

#### **Section 2.2.4.4: Map Spoke Spatial Data Elements and Data Elements**

Mapping elements from the spoke to Water PIE is a multiple step process. The spoke steward will repeat this process three times. The spoke steward will map the spatial data elements during the first repetition of this process. The spoke steward will map the data elements during the second repetition of the process. The spoke steward will map the units during the third repetition of the process.

The spoke steward has two methods to enter elements into Water PIE during one of the repetitions. The spoke steward may enter each element individually, or upload the elements from a DWR provided template. In either case, the system will present the Spoke steward with a screen like the one presented in Figure 26.

Using this screen, the spoke steward will translate the field from the spoke to a field in the common language. The system has two types of fields that the spoke steward can translate: a simple field and a variable field. A simple field is a field that always contains the same type of value, such as a date or telephone number. For a simple field, the spoke steward relates one field from the spoke to one element of the common language. An example of a simple field is a field containing the PH measurement.

A variable field can be a foreign key in a data schema for a database. For a variable field, the spoke steward must identify all the possible values this field may contain. An example of a variable field would be a field that contains that identifies the type of measurement for example, pH, salinity, etc. This adds an extra step in the mapping process. The spoke steward relates multiple elements of the common language to a single field from the spoke. If the spoke steward cannot find a matching element, then the spoke steward should contact the DWR Water PIE administrator. The DWR Water PIE administrator will add the element to the common language, and the spoke steward can complete the mapping.

Water PIE has different dictionaries for the common language. The first time through the process, the spoke steward will use a dictionary(s) for spatial elements. The second time through, the spoke steward will use a dictionary(s) for data elements. The element type (spatial element data elements or data elements) selected controls the dictionaries available. The third time through the process, the spoke steward will use a dictionary(s) for units.



At any point, the spoke steward may delete or add new elements.

Organization Name: DWR  
Data Source: CASGEM

Register New Organization Edit Organization & Data Sources

Register New Spoke Copy Spoke Registration Information

Spoke	Status	Action
Ground Water Measurements	Registered	Edit
Well Information	Pending	Edit

Info Contacts Spatial Objects Data Elements History Update Cancel

Element Type:

Import Data Elements Add New Data Element Map to Standard Dictionary

Field	Description	Common Language	Key Date Field	Map	Action
Key Variable	Record variable	Variable		Edit Element	Edit Variable
Value	Value of Key Variable	Value		Edit Element	
Unit	Unit of Key variable	Unit - Variable		Edit Element	Edit Variable
Who Measured	Who measured	WaterML/organic/measured by		Edit Element	
Method	Method used to measure	WaterML/Physical/Temperature		Edit Element	
Date	Date of measurement	Date	Yes	Edit Element	

Data Elements:  +

Field	Description	Common Language	Key Date Field	Map	Action
Key Variable	Record variable	Variable		Edit Element	Edit Variable
Value	Value of Key Variable	Value		Edit Element	
Unit	Unit of Key variable	Unit - Variable		Edit Element	Edit Variable
Who Measured	Who measured	WaterML/organic/measured by		Edit Element	
Method	Method used to measure	WaterML/Physical/Temperature		Edit Element	
Date	Date of measurement	Date	Yes	Edit Element	

Data Element: Method Desc: Method used to measure Update Cancel

☒ Mapped directly to Common Language ☐ Variable Field

Common Language: WaterML/Physical/Temperature

Common Language

- WaterML
- Physical
- Temperature

Figure 26. Map Spoke Elements

Figure 27 below displays the mapping of a variable field to the common language. In this instance, the spoke steward identifies a data element as a variable field, adds the variables, and maps the variables to the common language.

Data Elements:

### Data Element List

Field	Description	Common Language	Key Date Field	Map	Action
▶ Key Variable	Record variable	Variable		<a href="#">Edit Element</a>	<a href="#">Edit Variable</a>
Value	Value of Key Variable	Value		<a href="#">Edit Element</a>	
Unit	Unit of Key variable	Unit - Variable		<a href="#">Edit Element</a>	<a href="#">Edit Variable</a>
Who Measured	Who measured	WaterML/organic/measured by		<a href="#">Edit Element</a>	
Method	Method used to measure	WaterML/Physical/Temperature		<a href="#">Edit Element</a>	
Date	Date of measurement	Date	Yes	<a href="#">Edit Element</a>	

Data Element:  Desc: 
  
☐ Spatial Element Data Element
  
☒ Mapped directly to Common Language ☒ Variable Field

### Variable List

Variable Name	Variable Description	Common Language	Action
▶ <a href="#">Alkalinity</a>	Solution to Neutralize Acids	Water ML/Chemical/pH	<a href="#">Edit</a>
<a href="#">Salinity</a>	Salt content of water	Water ML/Organic/Salinity	<a href="#">Edit</a>

Data Element:  Desc: 
  
Variable:  Desc:

☒ Map to Common Language ☐ Map to Unit
  
Common Language: 
  

Common Language 

- ☐ Organic
- ☐ Alkalinity
- ☒ pH

**If mapping variable to Common Language**

Figure 27. Map Spoke Elements to Common Language

### Section 2.2.4.5. Map Units

If the data element identifies the unit of measure, the spoke steward will map the units to the common language units.

Variable Name	Variable Description	Unit	Action
<a href="#">In</a>	Inches	Inches	<a href="#">Edit</a>
<a href="#">CFS</a>	Cubic feet per second	CFS	<a href="#">Edit</a>

Data Element:  Desc:

Variable:  Desc:

☐ Map to Common Language ☒ Map To Unit

Unit:

Unit Type:

Unit	Description
<a href="#">Feet</a>	Feet
<a href="#">ML</a>	Milliliters

Figure 28. Map Units

### Section 2.2.4.6: Map to Standard Dictionary

In some cases, the spoke steward may have an optional choice of using a pre-defined translation. One such case may be a translation between water quality elements in the common language and the EPA's WQX data schema. At the time of this writing, DWR hopes to have this translation complete before Water PIE is implemented. The spoke steward may then select an option to use a pre-defined translation for the spoke. DWR hopes to build pre-defined translations as Water PIE matures.

**Map to Standard Dictionary**

Standard Protocol Dictionary:  Desc:

Standard Protocol Dictionary:  Desc:

Mapped to Standard:

Unmapped:

☒ Both ☐ Mapped ☐ Unmapped

Field	Description	Common Language	Action	Action
Alkalinity	Alkalinity	Organic/Alkalinity/pH Meter and Electrode	<a href="#">Edit</a>	NA
Parameter		Variable	<a href="#">Edit</a>	<a href="#">Edit Variable</a>
Depth			<a href="#">Map to CL</a>	
Odor			<a href="#">Map to CL</a>	
pH Level			<a href="#">Map to CL</a>	
Radon	Radon	Organic/Radon	<a href="#">Edit</a>	NA

Figure 29. Map to Standard Dictionary

### Section 2.2.4.7: View History

The DWR Water PIE administrator and spoke steward can view a log of activities related to a spoke. The history log tracks each update to a spoke and who updated the spoke. The history log also lists the history of the registration process including tests performed and status updates.

Organization Name: DWR  
Data Source: CASGEM

Register New Organization Edit Organization & Data Sources

Register New Spoke Copy Spoke Registration Information

Spoke	Status	Action
Ground Water Measurements	Registered	Edit
Well Information	Pending	Edit

Info Contacts Spatial Objects Data Elements History Update Cancel

Submitted on 2/1/2013, User Name, Email  
Approved on 2/2/2013, User Name, Email  
Deactivated on 2/22/2013, User Name, Email  
Activated on 2/24/2013, User Name, Email

Figure 30. View History

### Section 2.2.4.8: Manage Spoke Status

The spoke steward and the DWR Water PIE administrator manage the spoke status. Only the DWR Water PIE Administrator can set the status to Approved from Pending Approval.

Organization Name: DWR  
Data Source: CASGEM

Register New Organization Edit Organization & Data Sources

Register New Spoke Copy Spoke Registration Information

Spoke	Status	Action
Ground Water Measurements	Registered	Edit
Well Information	Pending	Edit

Info Contacts Spatial Objects Data Elements History Update Cancel Delete

Spoke Name: Ground Water Measurements Status: Approved Test Connection

Spoke Description:

Date Created: Update Frequency:

Temporal Scale: Start Date: End Date:

Temporal Scale Description: Upload Temporal Scale

Spatial Reference Description including projection, datum, what the shapefile represents: Upload Spatial Reference

Spatial Accuracy Description: Upload Spatial Accuracy

Methodologies for Collection: Upload Methodologies File

Use Constraints/Liabilities: Upload Constraints File

Status field controls access to the public

Figure 31. Manage Spoke Status

The spoke steward and DWR Water PIE administrator can inactivate or deactivate a spoke using the status field. When the status of a spoke is set to inactivated, the system displays the spoke as inactive to all users. When the status of a spoke is set to deactivated, the system does not display the spoke to users. In addition, the actor may choose to delete a spoke if the spoke is a copy or has not been activated.

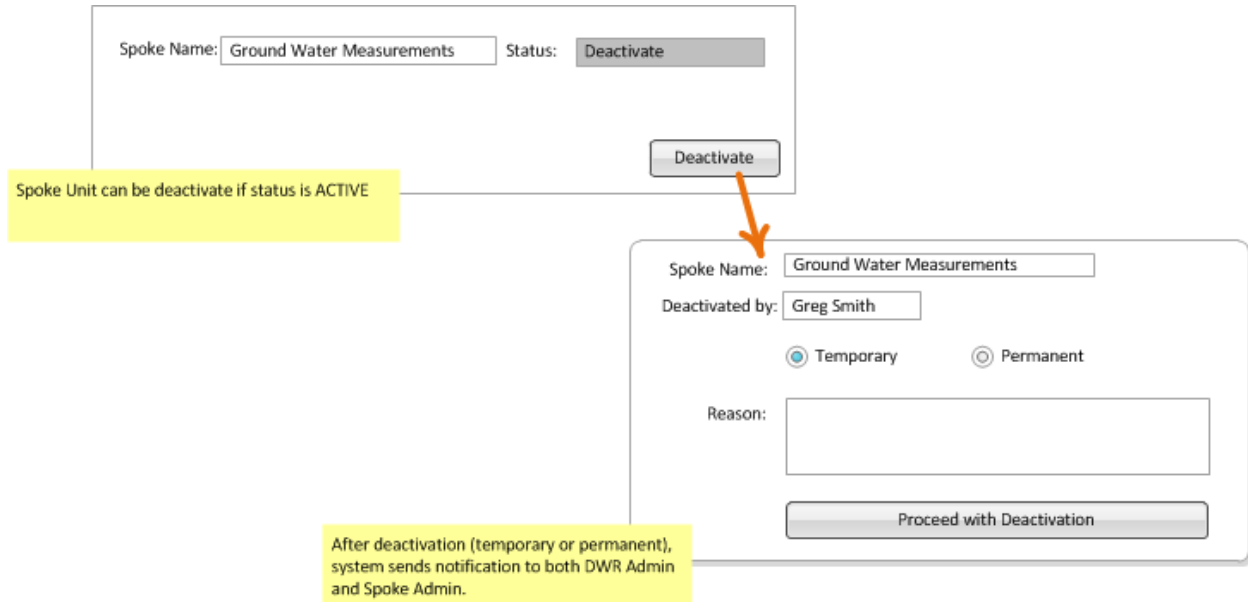


Figure 32. Manage Spoke Status

#### Section 2.2.4.9: Copy a Spoke

A spoke steward may wish to make changes to the spoke's connection or data mapping. To accomplish this, the spoke steward will copy the spoke information to a new spoke, make the necessary changes to the spoke, test the changes, and then replace the original spoke.

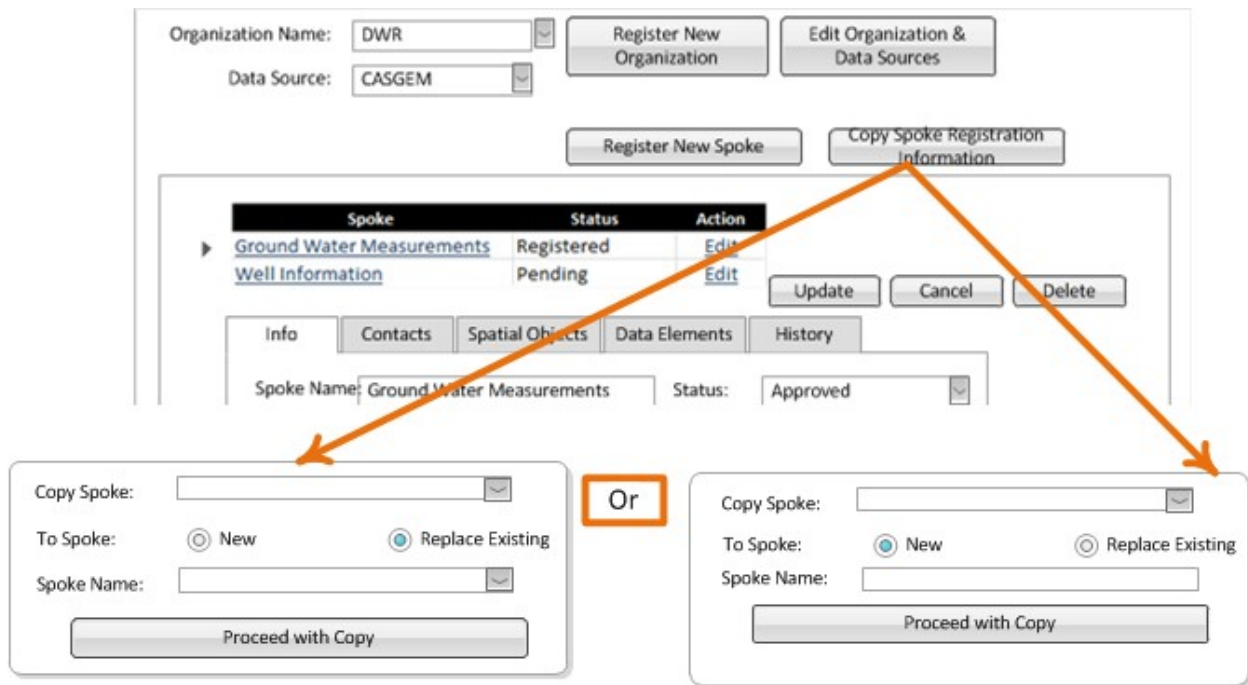


Figure 33. Copy a Spoke

### SECTION 2.3: SEARCHING

This section provides processes, uses cases, and storyboards describing the process of searching for and accessing data through Water PIE. The Searching section includes creating a search, navigating within a map, advanced searching capabilities, filtering the result before running the query and once the system retrieves and displays the result, printing and saving reports, chart functionality, and administering preferences.

This section includes the following subjects: perform search, perform spatial display, perform tabular search, filter and display results, administer search preference, save report, print report, display hydrograph, and perform help.

#### SECTION 2.3.1: PROCESS FLOW DIAGRAM

The searching process illustrates how actors search, retrieve, filter, and save data from spokes through Water PIE. Because of the myriad of options, setting up a query can take a number of paths. An actor may set up a search by selecting spokes or common language categories and then display the results on the map. An actor may draw an area on the map. The system will display the monitoring sites, and other spatial objects that have data within the area. An actor may refine the selection by changing the spokes selected. In addition, an actor may refine the selection by changing the data elements selected (or select a data element group).

The system also allows an actor to zoom and pan to find a better location. The system provides the actor with query tools such as spatial joins, intersects, and differences of spatial elements.

Configuring a search may take a fair amount of time. When the actor is satisfied, and if the actor is registered, the actor may save the configuration so the actor can return to it in the future.

Once the user selects spatial elements to query the selected spatial elements, the system allows the actor to filter the query by date range or restrict the query to specified data elements. The following diagram depicts the many options and iterations an actor may take during the process of creating a search. The diagram below highlights the primary path.

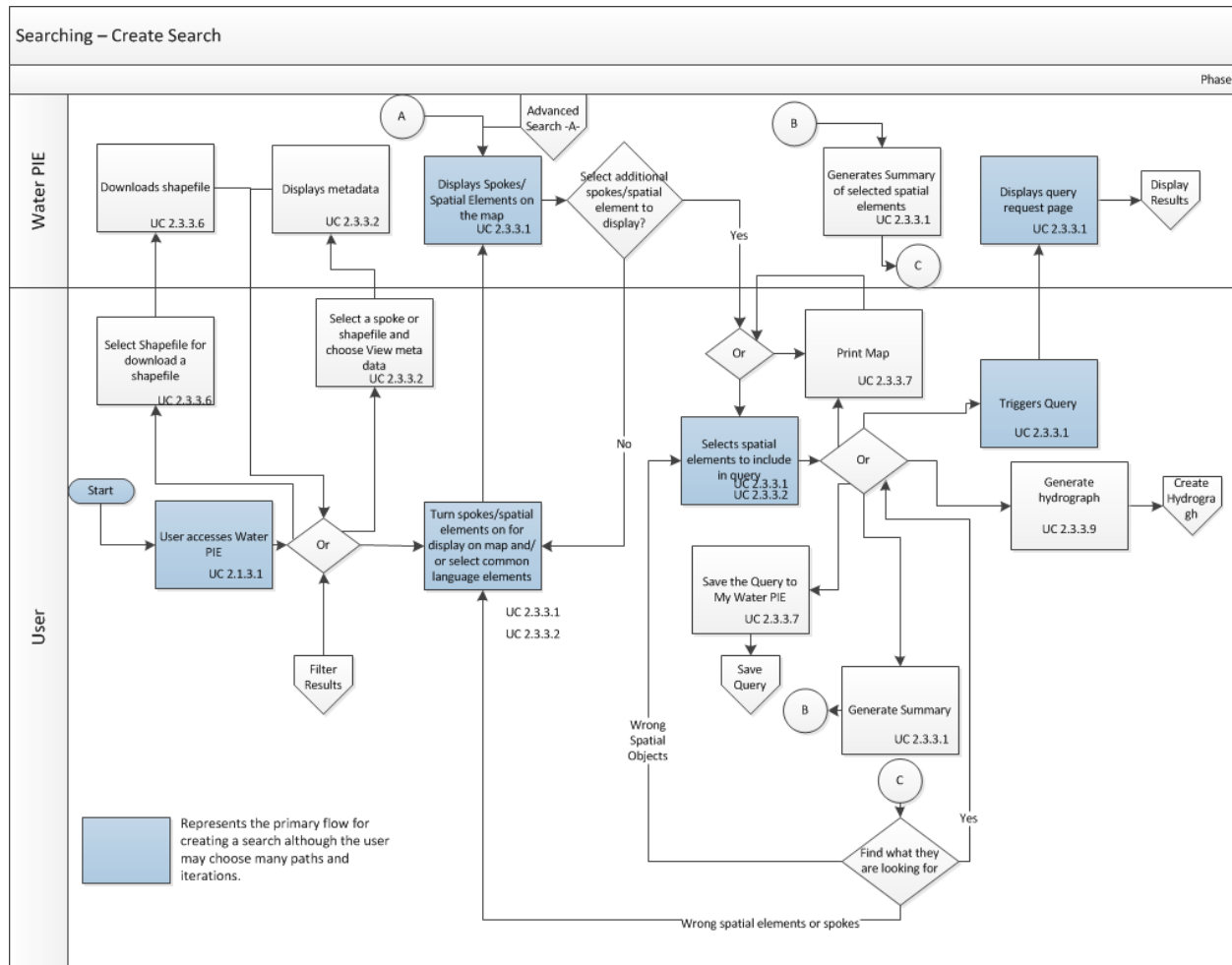


Figure 34. Search

An actor may also perform a tabular search. The actor can set up a complex search including extensive filtering based on values or selected elements.

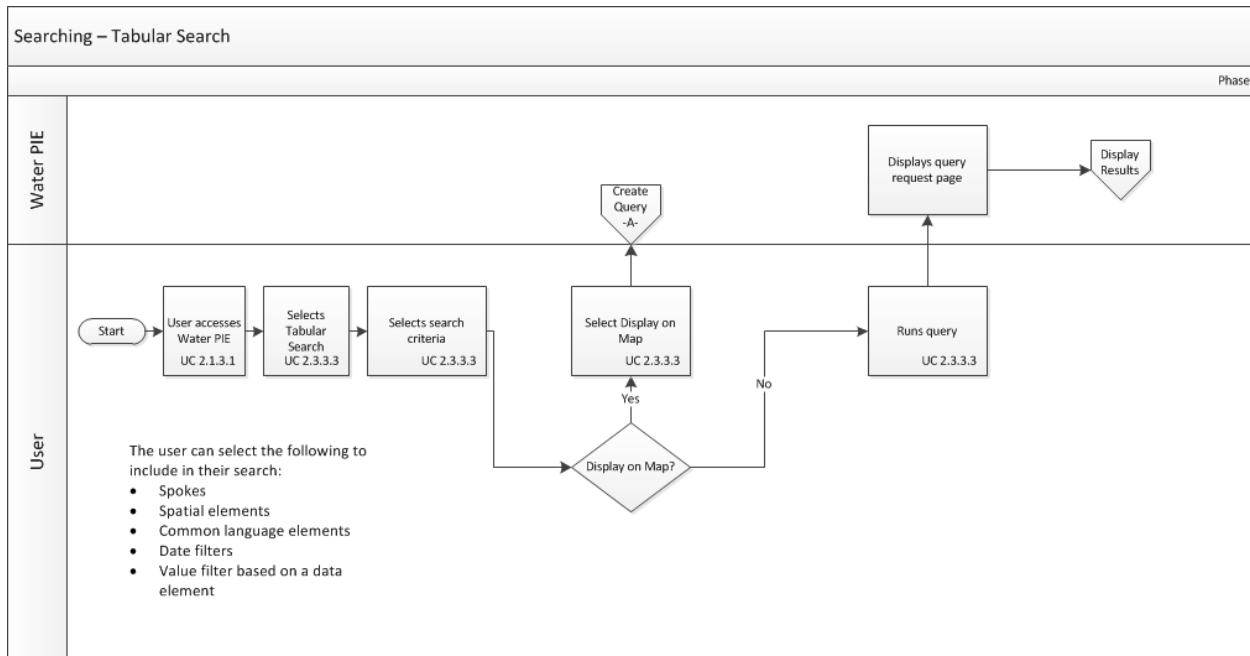


Figure 35. Create Tabular Search

Once the system returns the results, the actor can view the results before saving or downloading.

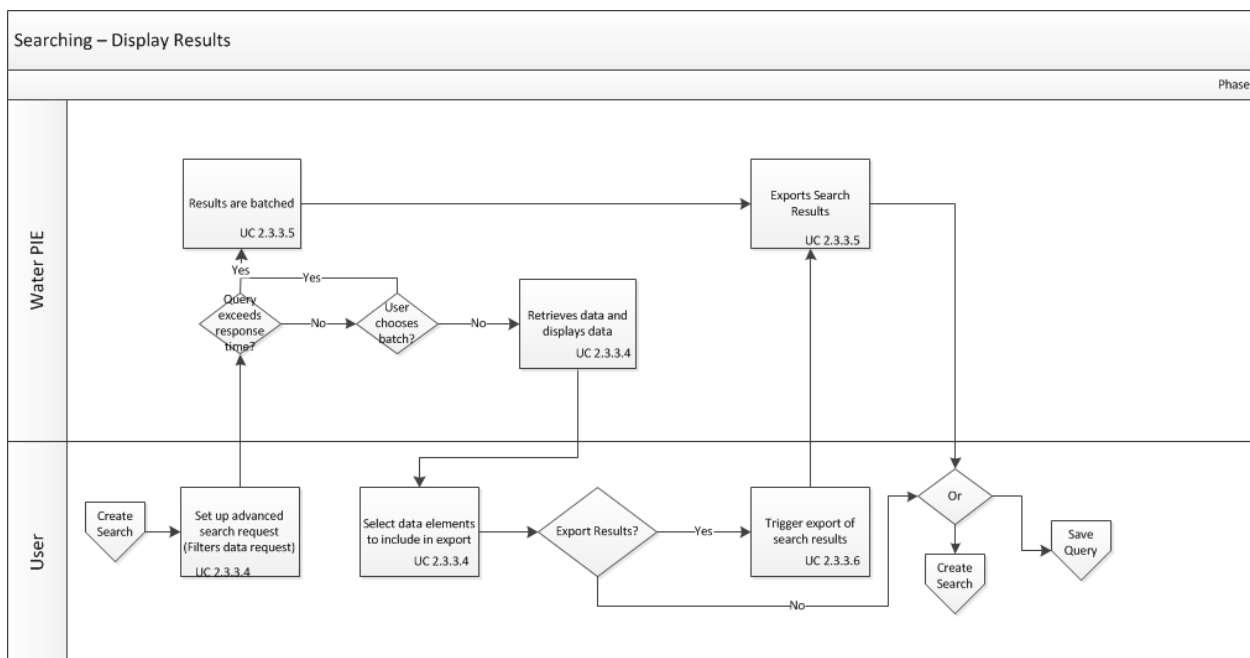


Figure 36. Display Results



In addition, an actor may choose to display the data results in a hydrograph, if the data elements are time-series data. An actor can customize the hydrograph display as well as save or print the result.

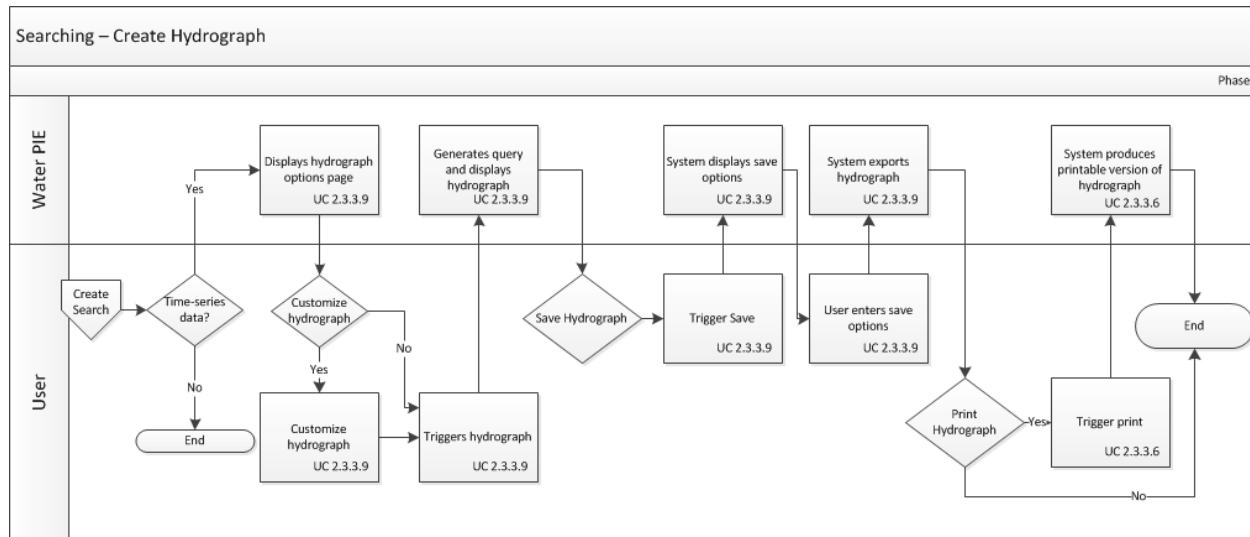


Figure 37. Create a Hydrograph

## SECTION 2.3.2: UML

The Searching for Data Unified Modeling Language Diagram below depicts the use cases included in the User Administration Process described in section 2.3.3.

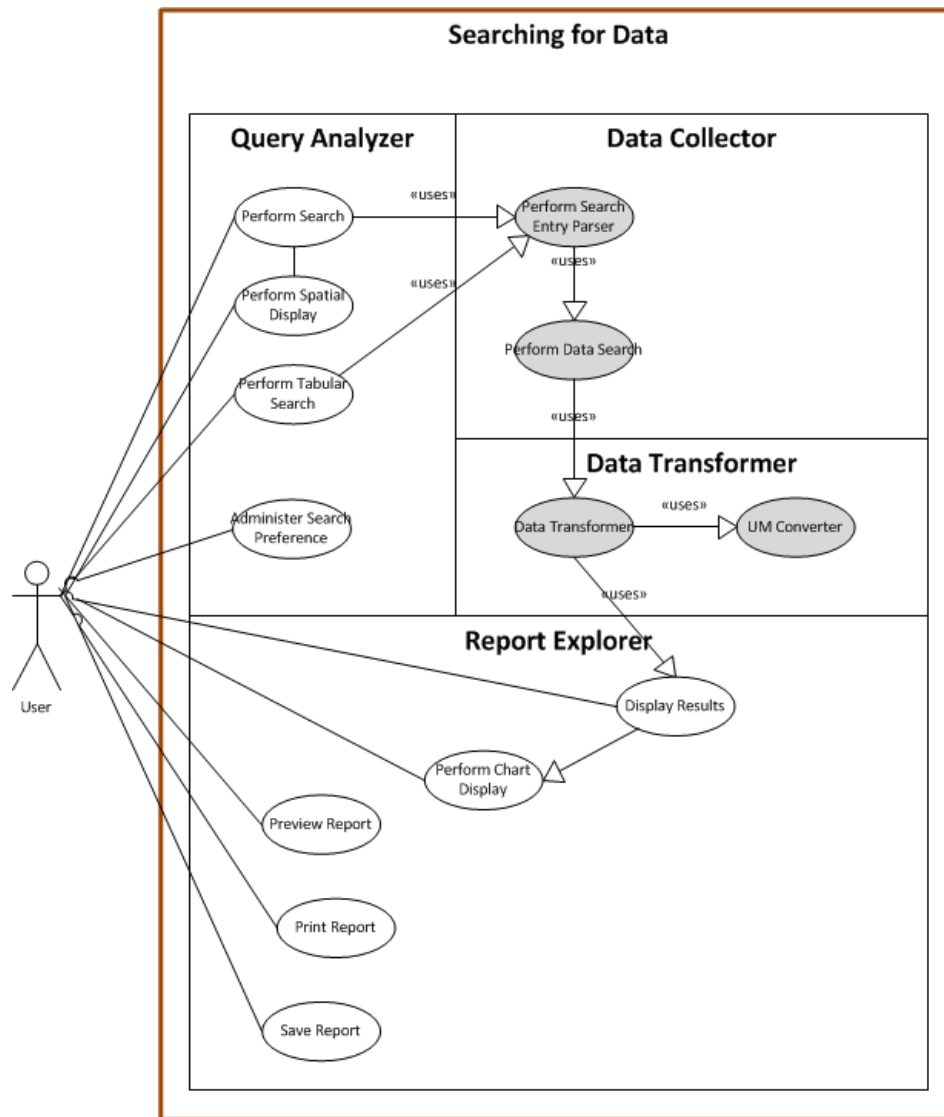


Figure 38. Querying Unified Modeling Language Diagram

## SECTION 2.3.3: USE CASES

### Section 2.3.3.1: Perform Search

Name	2.3.3.1 - Perform Search
Description	This use case describes the steps and options for creating and generating a spatial query.
Storyboards	Setion:2.3.4.1: Select Common Language Elements Section 2.3.4.2: Select Spoke

Name	2.3.3.1 - Perform Search
	<p>Section 2.3.4.3: Select Shapefile</p> <p>Section 2.3.4.4: Select Basemap</p> <p>Section 2.3.4.5: Select One or More Spatial elements</p> <p>Section 2.3.4.6: Select Buffer</p> <p>Section 2.3.4.7: Select Join, Intersect or Difference</p> <p>Section 2.3.4.8: View Summary</p>
Precondition / Assumptions	Actor has accessed the system via the website.
Actors	User
Steps	<ol style="list-style-type: none"> <li>1. Actor selects spatial query parameters. <ol style="list-style-type: none"> <li>1.1. Optional - Actor selects Spoke - or – Common language category. <ol style="list-style-type: none"> <li>1.1.1. If the Actor selects spoke first. May be repeated. <ol style="list-style-type: none"> <li>1.1.1.1. Actor opens list to see available organizations.</li> <li>1.1.1.2. Actor selects an organization.</li> <li>1.1.1.3. System displays the data sources available for the selected organization.</li> <li>1.1.1.4. Actor selects a data source.</li> <li>1.1.1.5. System displays spokes available for the data source.</li> <li>1.1.1.6. Actor selects spoke. <ol style="list-style-type: none"> <li>1.1.1.6.1. Actor triggers the map update.</li> </ol> </li> <li>1.1.1.7. System displays spoke spatial elements on the map until the spoke is unselected, or until the actor closes the web browser tab.</li> <li>1.1.1.8. Actor selects Common Language filter.</li> <li>1.1.1.9. System filters list of Common Language categories by those categories and elements supplied by the spokes selected.</li> </ol> </li> <li>1.1.2. Optional - Actor selects common language categories or data elements first – May be repeated. <ol style="list-style-type: none"> <li>1.1.2.1. Actor selects using common language tree: <ol style="list-style-type: none"> <li>1.1.2.1.1. Actor opens list to see available categories and drills down to the appropriate common language element.</li> <li>1.1.2.1.2. System displays the data elements.</li> <li>1.1.2.1.3. Actor selects an element or category of elements.</li> <li>1.1.2.1.4. Actor triggers the map update.</li> <li>1.1.2.1.5. System displays spatial elements that contain information mapped to the element or category of elements until the spoke is unselected or until the actor closes the web browser tab.</li> </ol> </li> <li>1.1.2.2. Actor selects by entering a keyword: <ol style="list-style-type: none"> <li>1.1.2.2.1. Actor selects enters a keyword into the common</li> </ol> </li> </ol> </li> </ol> </li> </ol> </li></ol>

Name	2.3.3.1 - Perform Search
	<p>language search field.</p> <p>1.1.2.2.2. System returns any matching common language elements or categories of elements.</p> <p>1.1.2.2.3. Actor selects an element or category of elements.</p> <p>1.1.2.2.4. Actor triggers the map update.</p> <p>1.1.2.2.5. System displays spatial elements that contain information mapped to the element or category of elements until the spoke is unselected or until the actor closes the web browser tab.</p> <p>1.2. Optional - Actor selects base map.</p> <p>1.2.1. Actor opens list to see available base maps.</p> <p>1.2.2. System displays available basemaps stored in stored on Enterprise GIS system.</p> <p>1.2.3. Actor selects a basemap.</p> <p>1.2.4. Actor triggers the map update.</p> <p>1.2.5. System displays basemap until the actor selects a new base map, or until the actor closes the web browser tab.</p> <p>1.3. Optional – Actor selects shapefile. May be repeated.</p> <p>1.3.1. Actor opens list to see available shapefiles.</p> <p>1.3.2. System displays available shapefiles stored in stored on Enterprise GIS system or consumed from spokes.</p> <p>1.3.3. Actor selects a shapefile.</p> <p>1.3.4. Actor triggers the map update.</p> <p>1.3.5. System displays spatial elements on the shapefile until the shapefile is unselected, or until the actor closes the web browser tab.</p> <p>1.4. Optional – Actor adjusts the transparency of the shapefile – May be repeated.</p> <p>1.4.1. Actor selects an active shapefile layer.</p> <p>1.4.2. Actor selects transparency adjustment and changes the transparency.</p> <p>1.4.3. System adjusts transparency of the selected layer.</p> <p>1.5. Optional – Actor adjusts the order of the shapefile layers – May be repeated.</p> <p>1.5.1. Actor selects an active shapefile layer.</p> <p>1.5.2. Actor selects layer order and changes the order of the layer.</p> <p>1.5.3. System adjusts the order of the selected layer. By order, the system should display basemaps on the bottom.</p> <p>2. Optional – Actor enters date range.</p> <p>3. Actor selects spatial elements using one of the following methods.</p> <p>3.1. Optional - Actor selects a single spatial element.</p> <p>3.1.1. Actor clicks on a spatial element.</p> <p>3.1.2. System highlights selected spatial elements.</p> <p>3.2. Optional - Actor selects many spatial elements.</p>

Name	2.3.3.1 - Perform Search
	<ul style="list-style-type: none"> <li>3.2.1. Actor holds the shift key down, and selects more than one spatial element.</li> <li>3.2.2. System highlights selected spatial elements.</li> <li>3.3. Optional - Actor draws a polygon that surrounds spatial elements.               <ul style="list-style-type: none"> <li>3.3.1. Actor selects a drawing tool.</li> <li>3.3.2. System changes point to drawing icon.</li> <li>3.3.3. Actor draws area.</li> <li>3.3.4. System highlights selected spatial elements.</li> </ul> </li> <li>3.4. Optional – Run buffer search.               <ul style="list-style-type: none"> <li>3.4.1. Actor draws on map using drawing tool.</li> <li>3.4.2. Actor enters buffer mileage in buffer box.</li> <li>3.4.3. Actor triggers selection.</li> <li>3.4.4. System selects all spatial elements within buffer entered of area drawn by actor.</li> </ul> </li> <li>3.5. Optional - Actor performs a spatial join, intersect or spatial difference between two or more spatial elements.               <ul style="list-style-type: none"> <li>3.5.1. Actor selects spatial join, intersect, or spatial difference option.</li> <li>3.5.2. Actor identifies shapefile layer as active.</li> <li>3.5.3. System displays active layer.</li> <li>3.5.4. Actor selects spatial element.</li> <li>3.5.5. System displays selected layer.</li> <li>3.5.6. Actor repeats to select additional layers.</li> <li>3.5.7. Actor triggers join, intersect, or spatial difference.</li> <li>3.5.8. System selects spatial elements in accordance with option selected (spatial join, intersect or spatial difference)</li> </ul> </li> <li>4. Optional – Actor views summary data.               <ul style="list-style-type: none"> <li>4.1. Actor selects one or more sites from a time series based spoke.</li> <li>4.2. Actor selects summary view.</li> <li>4.3. System retrieves summary data from data source (or stored data).</li> <li>4.4. System displays summary data.                   <ul style="list-style-type: none"> <li>4.4.1. Organization, spoke, Site ID, Site Name, Total Records available, Earliest Date of Records, Latest Date of Records, Frequency.</li> </ul> </li> </ul> </li> <li>5. Actor triggers query.</li> <li>6. System retrieves and displays query results, see use case Filter and Display Result.</li> </ul>
Variations	<ul style="list-style-type: none"> <li>1. Actor cancels map update.               <ul style="list-style-type: none"> <li>1.1. Actor stops map update.</li> </ul> </li> <li>2. Spoke not available.               <ul style="list-style-type: none"> <li>2.1. System displays message stating spoke is not available.</li> <li>2.2. Actor chooses to continue with remaining spokes or cancel map or query.                   <ul style="list-style-type: none"> <li>2.2.1. If continue, the spoke is no longer displayed as selected.</li> </ul> </li> </ul> </li> <li>3. Optional - Actor clears the search criteria.</li> </ul>

Name	2.3.3.1 - Perform Search
	<p>3.1. Actor select clear.</p> <p>3.2. System returns to map with features unselected.</p> <p>3.3. Optional – Actor begins a new search.</p> <p>4. Optional - Actor clears selections.</p> <p>4.1. Actor clears the selection of an organization.</p> <p>4.2. The system un-selects all data sources and spokes for that organization.</p> <p>4.3. The system un-selects all spatial elements for the data sources and spokes on the map interface.</p> <p>5. Optional - Actor clears the selection of a data source.</p> <p>5.1. The system un-selects all spokes for that data source.</p> <p>5.2. The system un-selects all spatial elements for the spokes on the map interface.</p> <p>6. Optional - Actor clears the selection of a spoke.</p> <p>6.1. The system un-selects the spoke.</p> <p>6.2. The system un-selects all spatial elements for the spoke on the map interface.</p> <p>7. Optional - Actor clears the selection of a data element group.</p> <p>7.1. The system un-selects the data element group and all data elements for that group.</p> <p>7.2. The system un-selects the spatial elements associated with the data element group and all data elements for that group on the map interface.</p> <p>8. Optional - Actor clears the selection of a data element.</p> <p>8.1. The system un-selects the data element.</p> <p>8.2. The system un-selects the spatial elements associated with all data elements on the map interface.</p> <p>9. Optional - Actor clears the selection of a shapefile.</p> <p>9.1. The system un-selects the shapefile.</p> <p>9.2. The system un-selects the spatial elements associated with the shapefile on the map interface.</p> <p>10. Optional - Actor selects Undo.</p> <p>10.1. System returns selection criteria to prior setting.</p> <p>10.2. Optional - Actor select Redo.</p> <p>10.3. System reapplies setting that was undone.</p> <p>11. Actor enters a keyword search that does not match any common language elements.</p> <p>11.1. System returns a message that there is no matching common language element.</p>
Exceptions / Business Rules	<p>1. Actor must select one or more spatial elements to trigger a query.</p> <p>2. Actor must be able to select all layers available and display on a single map.</p>
Post Condition	System runs spatial search.
Attributes	None

**Section 2.3.3.2: Perform Spatial Display**

Name	2.3.3.2 Perform Spatial Display
Description	This use case describes the spatial display and navigation options.
Storyboards	Section 2.3.4.9: Zoom In, Pan, and View Cluster Section 2.3.4.10: Map Index Section 2.3.4.11: View Metadata
Precondition / Assumptions	Actor has accessed the system via the web and the system displays selected organizations/spokes, and spatial elements.
Actors	User
Steps	<ol style="list-style-type: none"> <li>1. Optional - Actor zooms in on map. <ol style="list-style-type: none"> <li>1.1. Actor selects zoom in tool.</li> <li>1.2. System changes the select icon to zoom in icon.</li> <li>1.3. Actor clicks in the map indicating where to zoom in.</li> <li>1.4. System zooms in <b>X</b> percent each time the actor clicks on the map.</li> </ol> </li> <li>2. Optional - Actor zooms out on map. <ol style="list-style-type: none"> <li>2.1. Actor selects zoom out tool.</li> <li>2.2. System changes the select icon to zoom out icon.</li> <li>2.3. Actor clicks in the map indicating where to zoom out.</li> <li>2.4. System zooms out <b>X</b> percent each time the actor clicks on the map.</li> </ol> </li> <li>3. Optional - Actor pans around map. <ol style="list-style-type: none"> <li>3.1. Actor selects the pan icon.</li> <li>3.2. System changes the select icon to pan icon.</li> <li>3.3. Actor clicks and drags the icon in the map indicating where to pan.</li> <li>3.4. System moves the map in accordance with the dragging of the icon.</li> </ol> </li> <li>4. Optional – Actor hides the index map (miniature map of California with an indicator identifying the area of the map currently displayed on the screen). <ol style="list-style-type: none"> <li>4.1. Actor selects the option to hide the index map.</li> <li>4.2. System hides the index map.</li> </ol> </li> <li>5. Optional – Actor views metadata for spatial element. <ol style="list-style-type: none"> <li>5.1. Actor right clicks on a spatial element and selects metadata</li> <li>5.2. System displays metadata regarding organization, data source and spoke.</li> </ol> </li> <li>6. Optional – Actor views metadata for spoke. <ol style="list-style-type: none"> <li>6.1. Actor selects metadata of spoke.</li> <li>6.2. System displays metadata regarding organization, data source and spoke.</li> </ol> </li> </ol>
Variations	<ol style="list-style-type: none"> <li>1. Optional – <ol style="list-style-type: none"> <li>1.1. If there are too many spatial elements to for the system to display at the current scale, the system displays a cluster (a circle with a number of spatial elements within it).</li> <li>1.2. Actor selects circle.</li> <li>1.3. System zooms in enough to display the sites independently.</li> </ol> </li> </ol>

Name	2.3.3.2 Perform Spatial Display
Exceptions / Business Rules	1. System must visually differentiate between clusters of different spokes/elements.
Post Condition	Actor identifies spatial elements.
Attributes	None

### Section 2.3.3.3: Perform Tabular Search

Name	2.3.3.3 Perform Tabular Search
Description	This use case describes the systems tabular search functionality. The use case begins when an actor opts to create a tabular search, and ends when the system displays the search results.
Storyboards	Section 2.3.4.14: Tabular Search
Precondition / Assumptions	Actor has accessed the system via the website.
Actors	User
Steps	<ol style="list-style-type: none"> <li>1. Actor selects Advanced Search.</li> <li>2. System displays tabular query parameters.</li> <li>3. Actor selects a query from the list of types. <ol style="list-style-type: none"> <li>3.1. If the actor selects the Common Language: <ol style="list-style-type: none"> <li>3.1.1. Actor selects the common language category or element.</li> <li>3.1.2. System filters spokes to those that provide data within the category or element selected.</li> <li>3.1.3. Optional: Actor selects spoke.</li> </ol> </li> <li>3.2. If the Actor select spokes: <ol style="list-style-type: none"> <li>3.2.1. Actor selects spokes.</li> <li>3.2.2. System filters common language categories and elements to those that provide data within the spokes selected.</li> <li>3.2.3. Actor selects common language category or element.</li> </ol> </li> </ol> </li> <li>4. Optional: Actor selects shapefile. May be repeated. <ol style="list-style-type: none"> <li>4.1. System displays a list of shapefiles.</li> <li>4.2. Actor selects from a list of shapefiles.</li> <li>4.3. Actor selects spatial element from shapefile, i.e. Sacramento within County Shapefile.</li> <li>4.4. Actor selects action to perform with spatial reference - All, Join, or Difference.</li> <li>4.5. Optional – Actor selects Add Another Spatial Reference and repeats section 4.</li> </ol> </li> <li>5. Optional: Enters date range and date data element on which to apply date range filter.</li> <li>6. Optional: Actor selects a measurement, an operation (Greater Than, Less</li> </ol>



Name	2.3.3.3 Perform Tabular Search
	<p>Than, Equal To, Exclude, Within, Is Null or Is Not Null) and enters value or values. May be repeated</p> <p>6.1. Actor selects data element/variable on which to apply measurement filter.</p> <p>6.2. Actor selects the unit of measure.</p> <p>7. Actor triggers query.</p> <p>8. System queries based on parameters actor selected and displays query results.</p>
Variations	<p>1. Actor selects query parameter for which there is no data.</p> <p>2. System displays a message – no data matches query parameters.</p> <p>3. Optional - Actor clears the search criteria.</p> <p>3.1. Actor select clear.</p> <p>3.2. System returns parameters to defaults.</p> <p>3.3. Optional – Actor begins a new search.</p> <p>4. Optional - Actor displays search criteria on map.</p> <p>4.1. Actor completes query parameters.</p> <p>4.2. Actor selects display on map.</p> <p>4.3. System displays query parameters in map view.</p>
Exceptions / Business Rules	
Post Condition	System displays report.
Attributes	None

#### Section 2.3.3.4: Filter and Display Results

Name	2.3.3.4 – Filter & Display Result
Description	This use case describes the systems query display and filtering capabilities. The use case begins with the system returns query results and ends with the results displayed.
Storyboards	<p>Section 2.3.4.12: Display Result</p> <p>Section 2.3.4.13: Filter Display Result</p>
Precondition / Assumptions	Actor has generated a query.
Actors	User
Steps	<p>1. System calculates estimated time to return results.</p> <p>1.1. See Use Case 2.3.3.5 – Batch Results.</p> <p>2. Optional - Actor selects date range or all data (default is all).</p> <p>2.1. Actor enters the 'To' and 'From' dates.</p> <p>2.2. Actor selects the date field from list of date fields that are common to all of</p>

Name	2.3.3.4 – Filter & Display Result
	<p>the spokes selected.</p> <p>2.3. System returns only records within the date range in the query results.</p> <p>3. Optional - Actor selects data elements to remove from query (default is all).</p> <p>3.1. Actor selects the data element columns to remove from query.</p> <p>3.2. System displays data element columns as removed from query and does not include the data element columns in the query return.</p> <p>4. System displays data from selected spatial elements.</p> <p>4.1. Optional – Actor sorts results. May be repeated.</p> <p>4.1.1. System displays results.</p> <p>4.1.2. Actor selects header of table.</p> <p>4.1.3. Table sorts by column.</p> <p>4.2. Optional – Actor views spatial element detail data.</p> <p>4.2.1. Actor selects spatial element detail tab.</p> <p>4.2.2. System displays data related to the spatial elements selected.</p> <p>4.3. Optional – Actor views spoke metadata.</p> <p>4.3.1. Actor selects metadata tab for spoke.</p> <p>4.3.2. System displays spoke metadata.</p> <p>4.4. Optional – Actor views spatial element metadata.</p> <p>4.4.1. Actor selects spatial element link.</p> <p>4.4.2. System displays spatial element metadata of spoke from selected link.</p> <p>4.5. Optional – Actor sorts the results list.</p> <p>4.5.1. Actor selects the column header by which to sort.</p> <p>4.5.2. Actor clicks on the column filter.</p> <p>4.5.3. System sorts the results by the column selected in ascending order.</p> <p>4.5.4. Actor clicks the column filter again.</p> <p>4.5.5. System sorts the results by the column selected in descending order.</p>
Variations	<p>System finds no results.</p> <p>1.1. System displays message that no results were found for spatial element selected.</p> <p>In 4, the system displays one or more links to files (documents, PDF, etc.) associated with the spatial elements selected.</p>

Name	2.3.3.4 – Filter & Display Result
	<p>1.2. Actor selects link.</p> <p>1.3. System triggers the file to open in the files native format.</p> <p>In 4, the system displays a combination of files and data.</p>
Exceptions / Business Rules	3. System should display spatial element data in one table.
Post Condition	System displays result.
Attributes	None

### Section 2.3.3.5: Batch Results

Name	2.3.3.5 – Batch Results
Description	<p>This use case describes the systems back end process of batching of query results. The use case begins when the actor triggers a search and ends when the system makes the results available to the user via batch.</p> <p>This use case is a sub process of Use Case 2.3.3.4.</p>
Storyboards	Section 2.3.4.12 Display Results
Precondition / Assumptions	Actor triggered search.
Actors	User
Steps	<ol style="list-style-type: none"> <li>1. System displays estimated time to return to results with option for actor to request the query results be batched using a back end process offline.</li> <li>4.6. If query requires less than 15 minutes Actor may select batch options instead of display. <ol style="list-style-type: none"> <li>4.6.1. Actor selects batch option, skip to step 2.</li> <li>4.6.2. Actor does not select batch option, return to Use Case 2.3.3.4. Filter and Display Results - step 2.</li> </ol> </li> <li>4.7. If query requires more than 15 minutes to return the results, the system automatically triggers the batching of results.</li> <li>2. System prompts actor for file format and email address.</li> <li>3. Actor chooses file format and provides email address.</li> <li>4. System retrieves data.</li> <li>5. System creates export file.</li> <li>6. System places export file in secure location.</li> <li>7. System emails actor to inform actor of available batch.</li> <li>8. Actor retrieves batch.</li> </ol>
Variations	

Name	2.3.3.5 – Batch Results		
Exceptions / Business Rules	1. Batched results must be available for 30 days and are deleted after 30 days.		
Post Condition	Actor has batch results.		
Attributes			
	Attribute	Description	Unique
	File Format	Selection of format options for export file.	No
	Email	Email address	No

#### Section 2.3.3.6: Administer Search Preference

Name	2.3.3.6 - Administer Preferences
Description	This use case describes the actor's ability to configure the view.
Storyboards	Section 2.3.4.9: Zoom In, Pan, and View Cluster
Precondition / Assumptions	Actor has accessed the system via the website.
Actors	User
Steps	<ol style="list-style-type: none"> <li>1. Actor selects Configure view. <ol style="list-style-type: none"> <li>1.1. Optional - Actor selects set font. <ol style="list-style-type: none"> <li>1.1.1. Actor selects increase or decrease font.</li> <li>1.1.2. System increases or decreases font in accordance with Actor's selection.</li> </ol> </li> <li>1.2. Optional – Actor selects scale. <ol style="list-style-type: none"> <li>1.2.1. Actor selects scale.</li> <li>1.2.2. System displays map in selected scale.</li> </ol> </li> <li>1.3. Optional – Actor defines symbol colors. This is a desirable functional requirement, not mandatory. <ol style="list-style-type: none"> <li>1.3.1. Actor selects shapefile.</li> <li>1.3.2. Optional - Actor selects symbol.</li> <li>1.3.3. Optional - Actor selects color.</li> <li>1.3.4. Actor triggers map update.</li> <li>1.3.5. System displays actor's selections.</li> </ol> </li> <li>1.4. Optional – Actor hides shapefiles from list of shapefiles <ol style="list-style-type: none"> <li>1.4.1. Actor selects Manage Shapefile option</li> <li>1.4.2. System displays Manage Shapefile options</li> <li>1.4.3. Actor selects shapefiles to hide.</li> <li>1.4.4. System does not display the shapefiles in the list of shapefiles.</li> </ol> </li> </ol> </li> </ol>
Variations	
Exceptions /	

Name	2.3.3.6 - Administer Preferences
Business Rules	
Post Condition	Actor has configured the view and system displays configuration.
Attributes	None

### Section 2.3.3.7: Save Report

Name	2.3.3.7 - Save Report
Description	<p>This use case describes the systems options for saving a report or data. The use case begins when an actor accesses the system and ends when the actor saves (downloads) the actor's report.</p> <p>Note: Actors can download search results and shapefiles. Actors can also save reports (administrative reports, hydrographs, and configured maps).</p>
Storyboards	<p>Section 2.3.4.12: Display Result</p> <p>Section 2.3.4.15: Manage Shapefile</p> <p>Section 2.3.4.16: Administrative Reports</p> <p>Section 2.3.4.18: Save a Chart</p>
Precondition / Assumptions	<p>The system has result displayed, see use case Display Result.</p> <p>Or</p> <p>The system has displayed a report.</p>
Actors	User
Steps	<ol style="list-style-type: none"> <li>1. Actor downloads data from query. <ol style="list-style-type: none"> <li>1.1. Actor generates results from a search; see use case Perform Spatial Search or Perform Tabular Search.</li> <li>1.2. Actor selects data to download.</li> <li>1.3. Actor triggers download.</li> <li>1.4. System downloads a file for the data, spatial element data, and metadata for each spoke.</li> <li>1.5. The system logs the request. Required. <ol style="list-style-type: none"> <li>1.5.1. IP address.</li> <li>1.5.2. User, if logged in. Optional.</li> <li>1.5.3. Date.</li> <li>1.5.4. Summary of data download.</li> </ol> </li> </ol> </li> </ol>
Variations	<ol style="list-style-type: none"> <li>1. In 1.4, if the data contains files, the system downloads the files individually in their native format in addition to the data file, spatial element and metadata files.</li> <li>2. Actor downloads standard report. <ol style="list-style-type: none"> <li>2.1. Actor triggers a standard report, see use case Preview Report.</li> </ol> </li> </ol>

Name	2.3.3.7 - Save Report
	<p>2.2.Actor selects download.</p> <p>2.3.System displays download parameters window.</p> <p>2.4.Actor selects download parameters.</p> <p>2.5.Actor triggers download.</p> <p>2.6.System downloads report to location specified in download parameters.</p> <p>4.8.The system logs the request:</p> <p>2.6.1. IP address.</p> <p>2.6.2.User, if logged in. Optional.</p> <p>2.6.3.Date.</p> <p>2.6.4.A single SQL statement.</p> <p>3. Actor downloads shapefile.</p> <p>3.1. Actor selects Layer management.</p> <p>3.2.System displays layer management options.</p> <p>3.3.Actor selects shapefile.</p> <p>3.4.Actor triggers download.</p> <p>3.5.System downloads shapefile to location specified by actor.</p> <p>4.9.The system logs the request:</p> <p>3.5.1. IP address.</p> <p>3.5.2.User, if logged in. Optional.</p> <p>3.5.3.Date.</p> <p>3.5.4.A single SQL statement.</p> <p>4. Actor downloads picture of configured page.</p> <p>4.1. Actor sets up spatial query.</p> <p>4.2.Actor triggers page download.</p> <p>4.3.System downloads page.</p>
Exceptions / Business Rules	<p>1. Options for download format include Excel, CSV, XML, and HEC DSS. HEC DSS only appears as an option for Time Series data.</p> <p>2. All downloads must include the parameters used to create the report including, at a minimum, date, organizations, spokes, and variables.</p> <p>3. Options for shapefile downloads are SHP, OCG or KML.</p> <p>4. All reports must include the metadata from the spoke and shapefiles.</p>
Post Condition	System downloads report.
Attributes	None

### Section 2.3.3.8: Print Report

Name	2.3.3.8 - Print Report
Description	This use case describes the systems report printing options. The use case begins when an actor accesses the system and previews a report and ends when the

Name	2.3.3.8 - Print Report			
	actor prints the actor's report.  Note: Reports are limited to administrative reports, hydrographs, and configured maps.			
Storyboards	Section 2.3.4.17: Save a chart.  Section 2.3.4.18: Administrative Reports			
Precondition / Assumptions	The Actor has previewed a report, see use case Preview Report.  Or  The system has result displayed, see use case Display Result.			
Actors	User			
Steps	1. Actor prints report. 1.1. Actor triggers a report. 1.2. Actor selects Print. 1.3. System triggers actor's print facility. 1.4. Actor selects Print from the actor's print facility. 1.5. Report is printed.			
Variations	1. Actor prints configured page (map). 1.1. Actor sets up spatial query. 1.2. Actor triggers page print. 1.3. System triggers actor's print facility.			
Exceptions / Business Rules				
Post Condition	Report is printed.			
Attributes	None			
Business Requirement  (Note: requirement ID is a unique ID that referenced in the Draft Business Requirement Document.)		Requirement ID		Requirement
		UE.AR.1	Users must be able to generate activity, including what users ha who downloaded it by spoke, pr	
		UE.AR.2	Users must be able to generate view configurations and custom user have saved by spoke, proj	
		UE.AR.3	Users must be able to generate activity related to shapefile dow	
		New	Users must be able to generate	

**Section 2.3.3.9: Display Hydrograph**

Name	2.3.3.9 - Display Hydrograph
Description	This use case describes the systems charting options for time series data.
Storyboards	Section 2.3.4.16: Prepare Charts Section 2.3.4.17: Save a Chart
Precondition / Assumptions	Actor generates a query of one or more time series spatial elements.
Actors	User
Steps	<ol style="list-style-type: none"> <li>1. Actor selects one variable. <ol style="list-style-type: none"> <li>1.1. Actor generates query and result is displayed, see use case Display Result.</li> <li>1.2. Actor selects one or more sites to include in hydrograph.</li> <li>1.3. Actor requests hydrograph.</li> <li>1.4. System displays hydrograph parameter options.</li> <li>1.5. Actor selects one or more variable.</li> <li>1.6. Actor selects date range and data element on which to apply date range parameter or all.</li> <li>1.7. Optional: Actor selects advanced features. <ol style="list-style-type: none"> <li>1.7.1. Actor enters title for hydrograph.</li> <li>1.7.2. Actor enters custom X and/or each Y-axis Label.</li> <li>1.7.3. Actor selects units for X and/or each Y-axis.</li> <li>1.7.4. Actor enters from and to range for X and/or each Y-axis.</li> <li>1.7.5. Actor enters scale for X and/or each Y-axis.</li> <li>1.7.6. Actor selects units for Y-axis.</li> </ol> </li> <li>1.8. Actor triggers hydrograph.</li> <li>1.9. System displays hydrograph with parameters selected.</li> </ol> </li> </ol>
Variations	<ol style="list-style-type: none"> <li>1. Actor selects two or more variables.</li> <li>2. Actor selects two or more spatial elements (sites).</li> <li>3. Actor saves hydrograph. <ol style="list-style-type: none"> <li>3.1. Actor selects Save.</li> <li>3.2. System displays Save Parameters</li> <li>3.3. Actor selects Format.</li> <li>3.4. Actor selects Save.</li> <li>3.5. System triggers save facility and actor identifies location.</li> <li>3.6. System saves hydrograph with based on the parameters selected.</li> </ol> </li> </ol>
Exceptions / Business Rules	<ol style="list-style-type: none"> <li>4. Hydrographs are only available for time series data.</li> <li>2. The list of options for units is dependent on the variable selected.</li> <li>3. The list of scale options is dependent of the units selected.</li> </ol>



Name	2.3.3.9 - Display Hydrograph
	<ol style="list-style-type: none"> <li>4. Hydrographs must generate warning message when null values or non-detect results are included in the range displayed. The system must not print the reading as zero.</li> <li>5. Null values and non-detect results must <b>not</b> be plotted.</li> <li>6. The hydrograph must display points and lines for each plot.</li> <li>7. Download options for hydrograph are PDF or PNG format.</li> <li>8. Hydrographs must be limited to 20 sites and/or parameters per graph.</li> <li>9. Each site or parameter must be visually distinguishable and defined in a legend.</li> <li>10. Future business need: Provide the ability for the actor to remove outlying results from graph that skew the result.</li> <li>11. Cancelling the hydrograph returns the actor to the parameter screen allowing them to change the report display and rerun the report.</li> </ol>
Post Condition	System displays hydrograph.
Attributes	None

**Section 2.3.3.10: Perform Help**

Name	2.3.3.10 Perform Help
Description	This use case describes the systems help features. The use case begins when an actor selects the help button for a tool or feature. The use case ends when the actor closes the help application.
Precondition / Assumptions	<p>Actor has accessed the system via the website. This use case will extend to the following tools and features:</p> <ol style="list-style-type: none"> <li>1. Spatial Selection</li> <li>2. Spatial query</li> <li>3. Tabular query</li> <li>4. Map Navigation</li> <li>5. Hydrographs</li> <li>6. Search</li> <li>7. Register spoke</li> <li>8. Deactivate/Inactivate spoke</li> <li>9. Spatial and Tabular Metadata</li> <li>10. Mapping data to dictionaries</li> <li>11. My Water PIE description of features, and why a user should take advantage of it</li> </ol>
Actors	User
Steps	<ol style="list-style-type: none"> <li>1. Actor selects tool or feature. <ol style="list-style-type: none"> <li>1.1. Actor right clicks on tool or feature.</li> </ol> </li> <li>2. System displays link to help page.</li> <li>3. Actor selects help page.</li> <li>4. System displays options of help video or interactive user manual. <ol style="list-style-type: none"> <li>4.1. If Actor selects video <ol style="list-style-type: none"> <li>4.1.1. System opens help window.</li> <li>4.1.2. System will display YouTube video demonstration.</li> </ol> </li> <li>4.2. If Actor selects interactive help option. <ol style="list-style-type: none"> <li>4.2.1. System displays user manual chapters and a text search option. <ol style="list-style-type: none"> <li>4.2.1.1. If actor selects chapter. <ol style="list-style-type: none"> <li>4.2.1.1.1. System displays chapter for actor to read.</li> </ol> </li> <li>4.2.1.2. If actor enters search text. <ol style="list-style-type: none"> <li>4.2.1.2.1. System searches text of user guide and displays matching chapters.</li> <li>4.2.1.2.2. Actor selects chapter to read.</li> <li>4.2.1.2.3. System displays chapter for actor to read.</li> </ol> </li> </ol> </li> </ol> </li> </ol> </li> <li>5. Actor closes window.</li> </ol>
Variations	<ol style="list-style-type: none"> <li>1. Actor selects field level help.</li> <li>2. System displays field level description with a link to the help page.</li> </ol>

Name	2.3.3.10 Perform Help
	3. Actor closes field level help window.
Exceptions / Business Rules	
Supplemental	
Post Condition	System resumes session.
Attributes	None

#### SECTION 2.3.4: STORYBOARD DIAGRAMS

An actor can search for and select data many different ways. An actor may start by selecting the organization. An actor could find all information that the Department of Water Resources shares. An actor may start by selecting the data to find. An example would be to search for all organizations that have stream discharge measurements. Alternatively, an actor may start by selecting the spatial elements to find. An actor may select a shapefile. Shapefiles are collections of spatial objects about which organizations are sharing information. An actor may select a shapefile for counties, and view information about counties shared through Water PIE. The actor can then use a variety of tools to refine the search. This section describes these options.

##### Section 2.3.4.1: Select Common Language Elements

An actor may start a search by selecting an element or elements of the common language. When the actor selects an element, the map will display spatial elements that may share that information. For example, if an actor selects pH, then the system will display sites that possibly have pH measurements on the map. Note: The system will not validate measurements for the data element until the actor triggers the retrieval of the data in Water PIE.

The actor can select a single element, multiple elements, or a category of common language elements. If a category is selected all of the elements within the category are automatically selected.

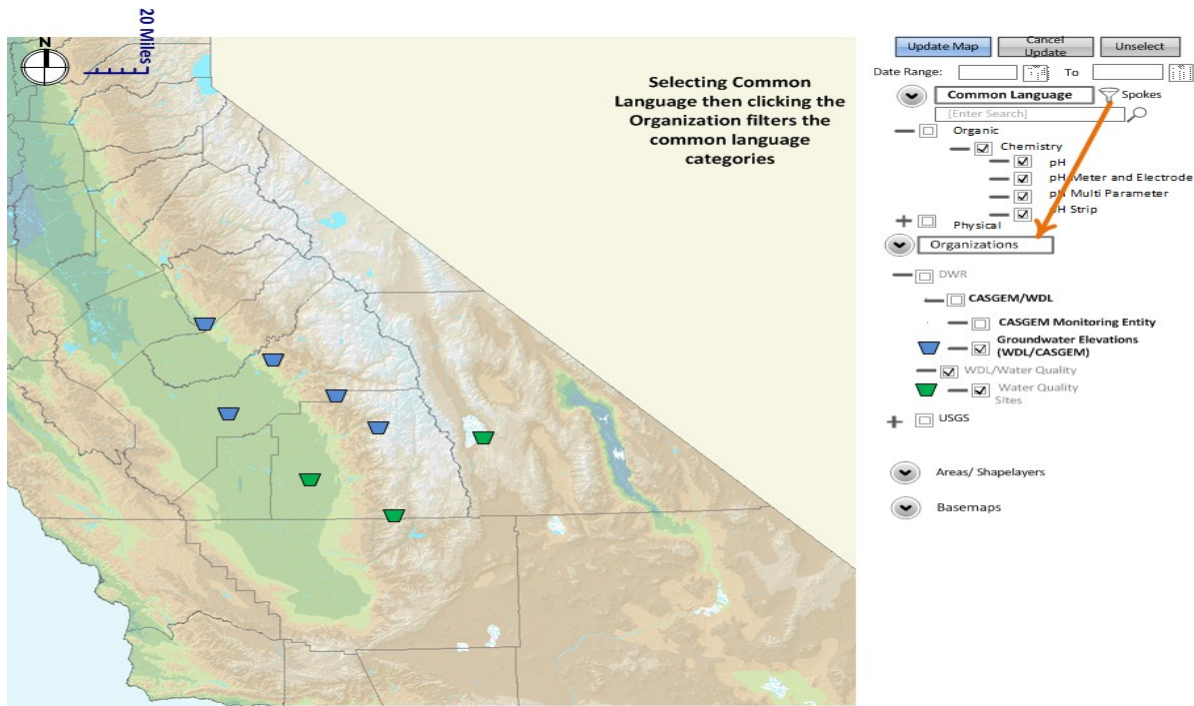


Figure 39. Select from Common Language Elements

#### Section 2.3.4.2: Select Spoke

An actor may select an organization, a data source, or a spoke. If the actor selects an organization, then Water PIE will display all the data sources, spokes and data from that organization on the map. If an actor selects a data source, then Water PIE will display all the spokes from that data source. In addition, if an actor selects a spoke, then Water PIE will display the spatial elements from the spoke.

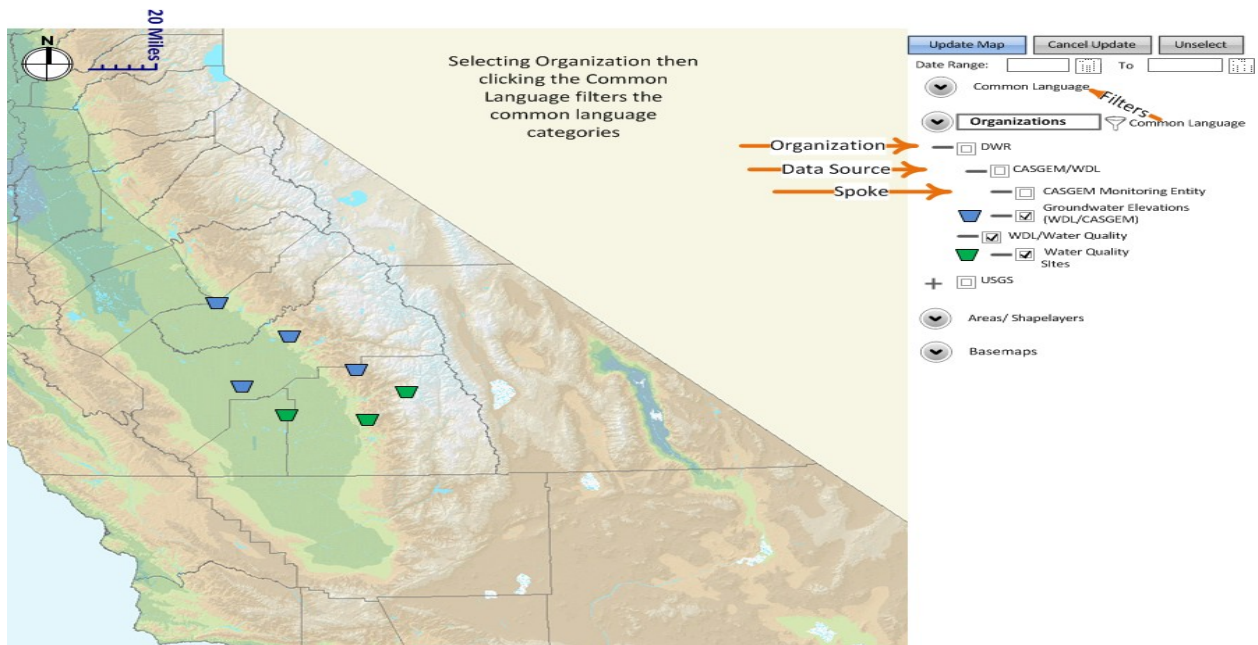


Figure 40. Select spoke

### Section 2.3.4.3: Select Shapefile

An actor may select a shapefile. Water PIE will display all the spatial objects associated with that shapefile. An actor can select multiple shapefiles.

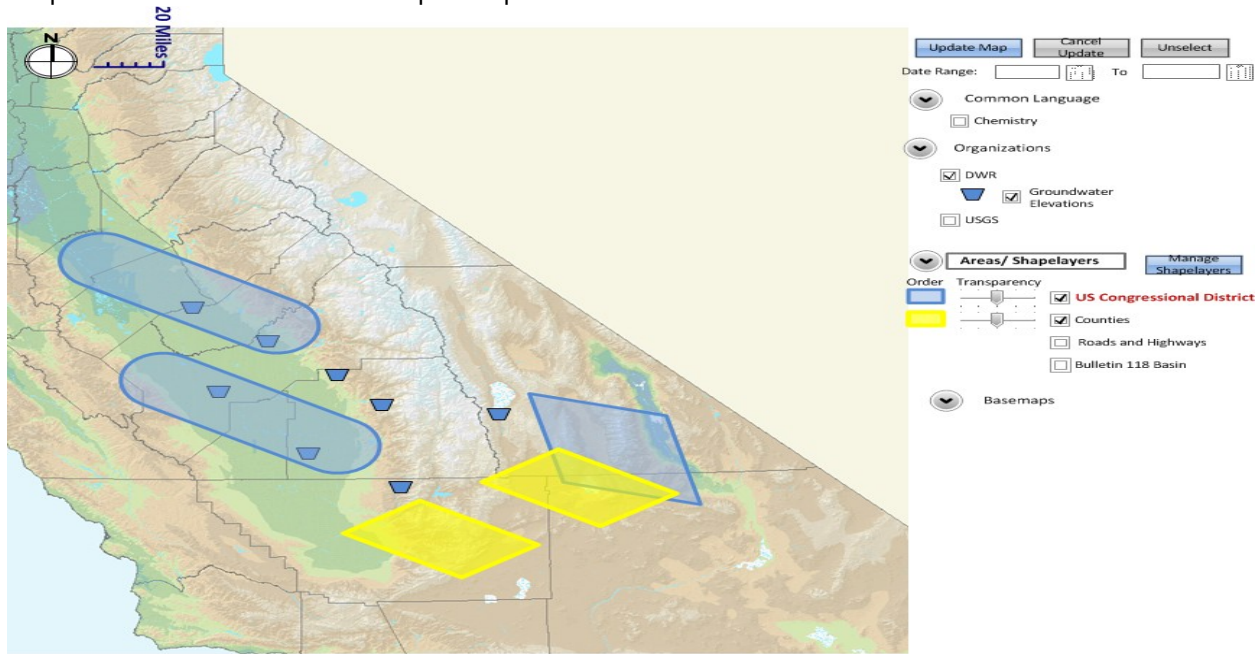


Figure 42. Select Shapefile

### Section 2.3.4.4: Select Basemap

A user may select a base map for Water PIE. The base map is the background imagery. The actor may only select one base map at a time.

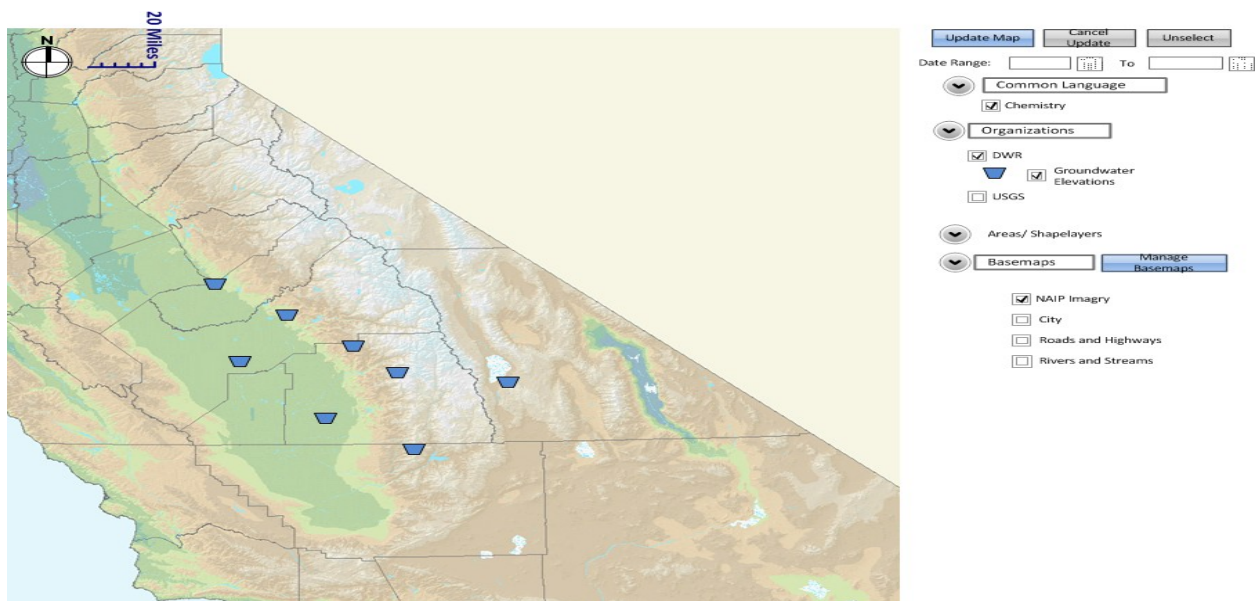


Figure 41. Select Basemap



### Section 2.3.4.5: Select One or More Spatial elements

Once the system displays the spatial elements on the map, the actor may select spatial elements by clicking on one or more elements. The actor may also use the select area function and drag the mouse or draw a custom area to select all spatial elements within that area. The actor may use the erase function to erase any drawn object.

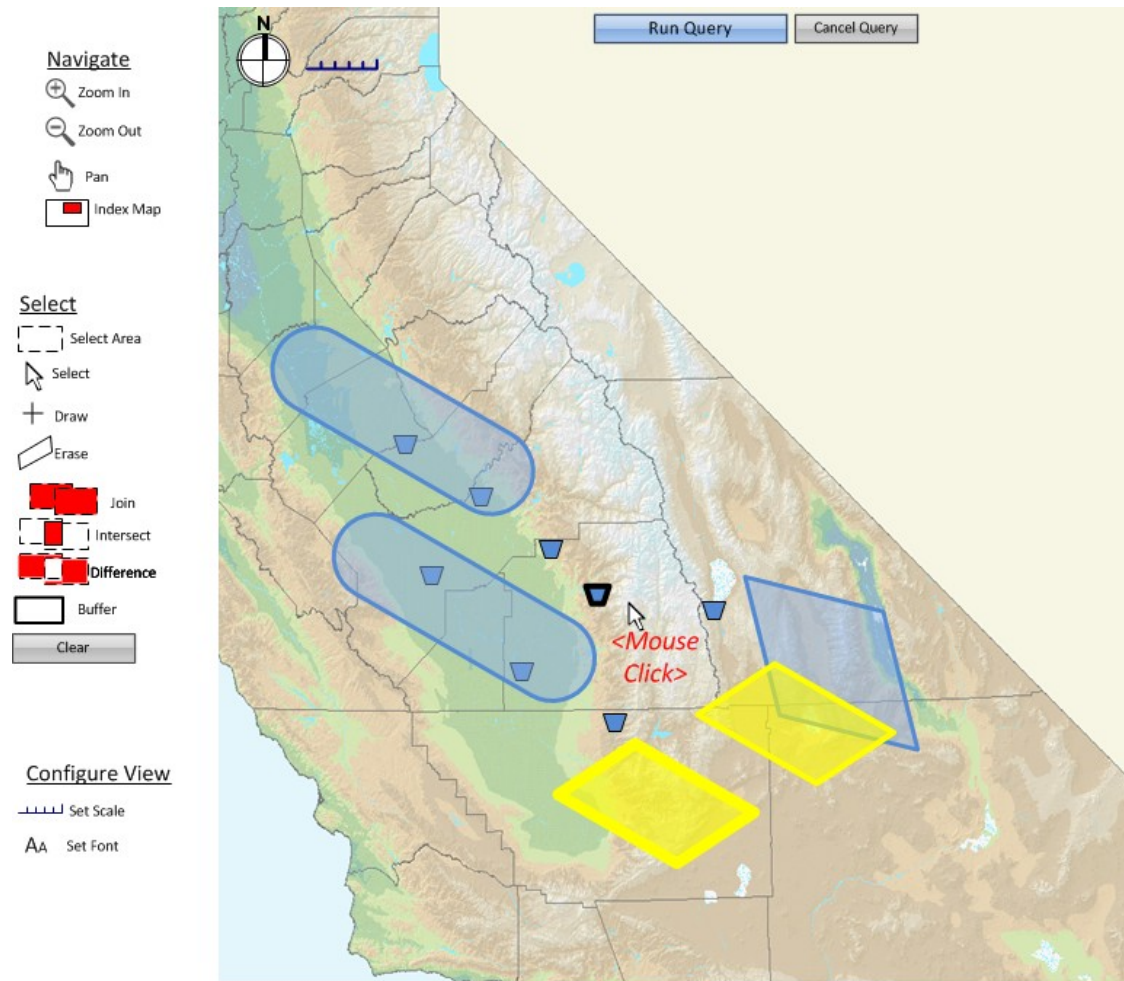


Figure 43. Select one or more Spatial Elements

### Section 2.3.4.6: Select Buffer

Select buffer tool selects spatial elements within an actor-designated distance from an actor designated point, line, or polygon. The actor may select the buffer tool, enter a distance, and then click on the map, draw a line or select a spatial element to select all spatial elements within the specified distance. Once selected the actor may choose to run the query to receive the data from the selected spatial element or generate a summary of the spatial elements data.

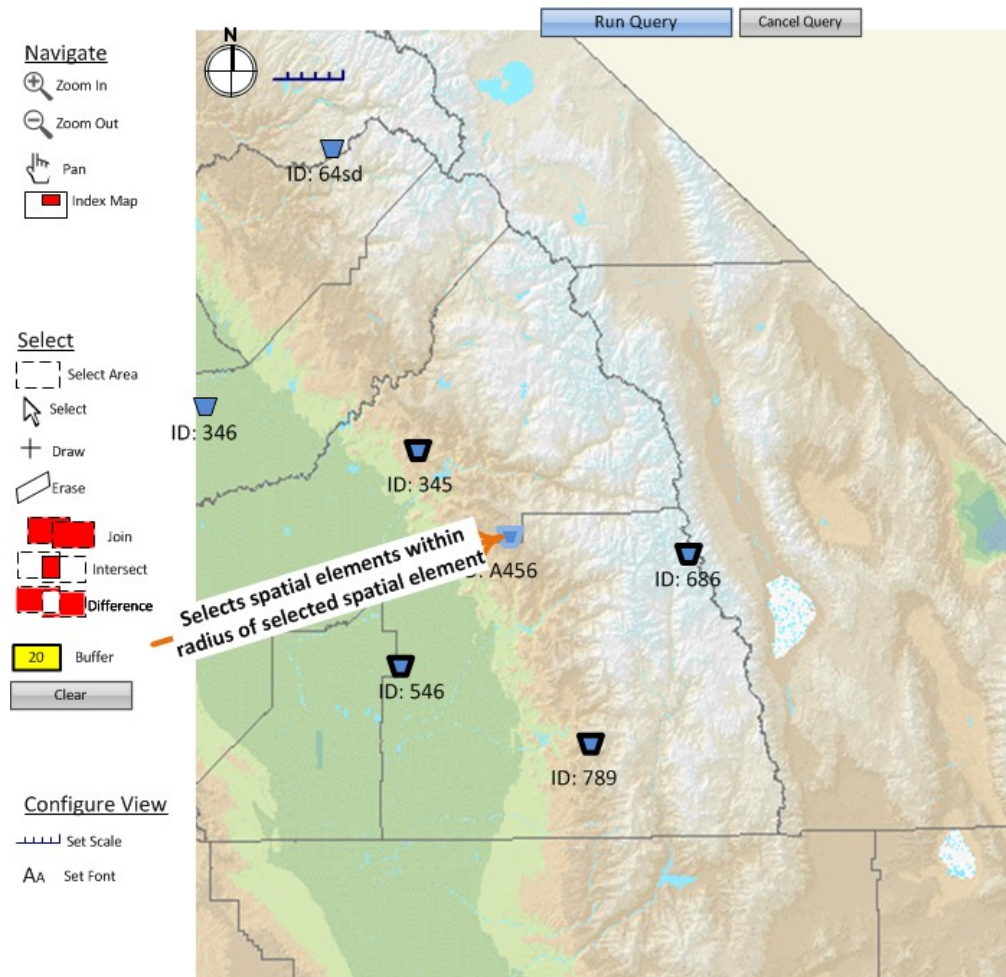


Figure 44. Select Buffer

### Section 2.3.4.7: Select Join, Intersect or Difference

The select join, intersect, and difference tools perform queries with spatial elements. The Join tool will merge multiple spatial elements into a single group. The Intersect tool will select the spatial intersection (or overlap) of multiple objects. The Difference tool will select multiple spatial elements and subtract out all overlaps.

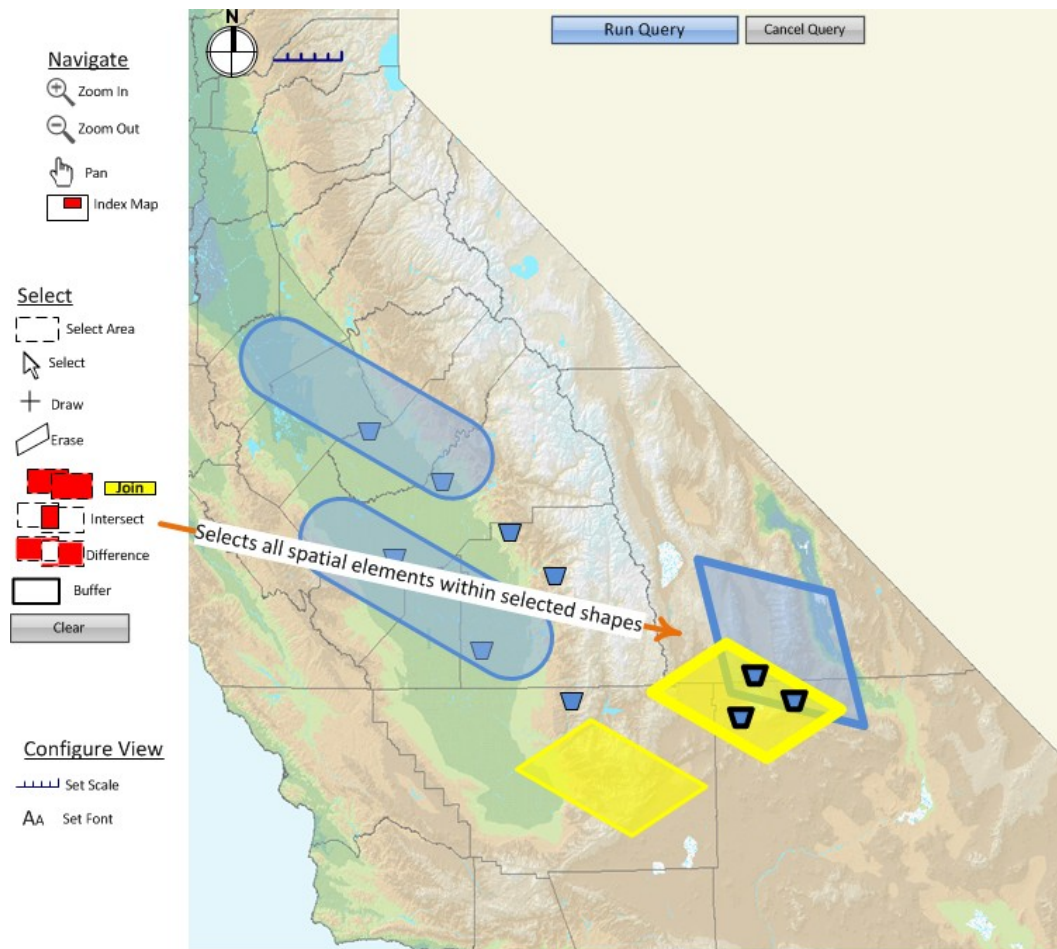


Figure 45. Select Join, Intersect, or Difference



### Section 2.3.4.8: View Summary

An actor may view summary information about the selected spatial elements (points, lines or polygons).

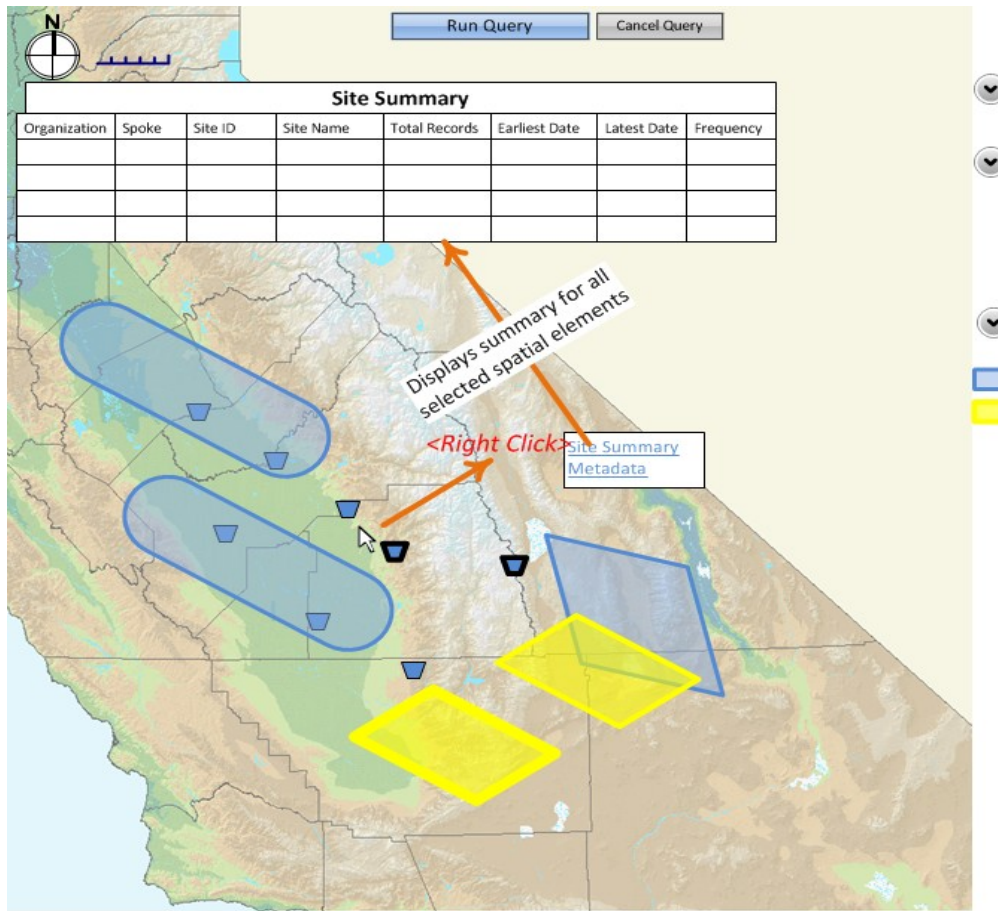


Figure 46. View Summary

### Section 2.3.4.9: Zoom In, Pan, and View Cluster

Pan and zoom tools help actors navigate the map and focus on selected viewing extents.

When many spatial elements are located in the same area, the system will display that all the spatial elements as a cluster. Water PIE will display a cluster as a single symbol denoting how many objects are in the cluster. As the actor zooms in (increases the resolution), the cluster will resolve into individual spatial elements.

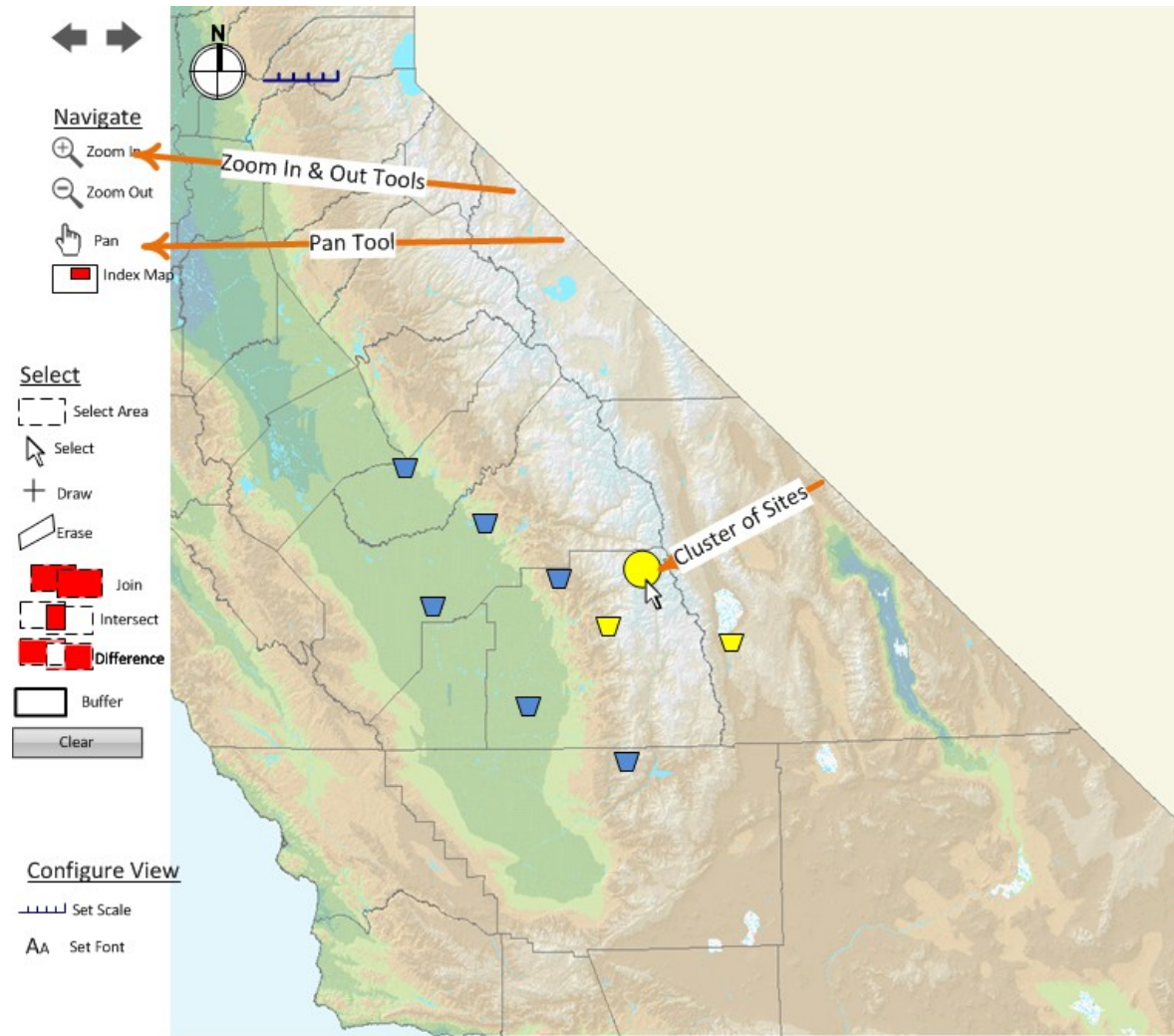


Figure 47. Zoom, Pan, and View Cluster

### Section 2.3.4.10: Map Index

The index map tool allows the user to hide the index map that shows the location of the actor within the larger extent of California. The actor has the ability to move the index map around the window. If the actor prints the map, the index map will print on the map.

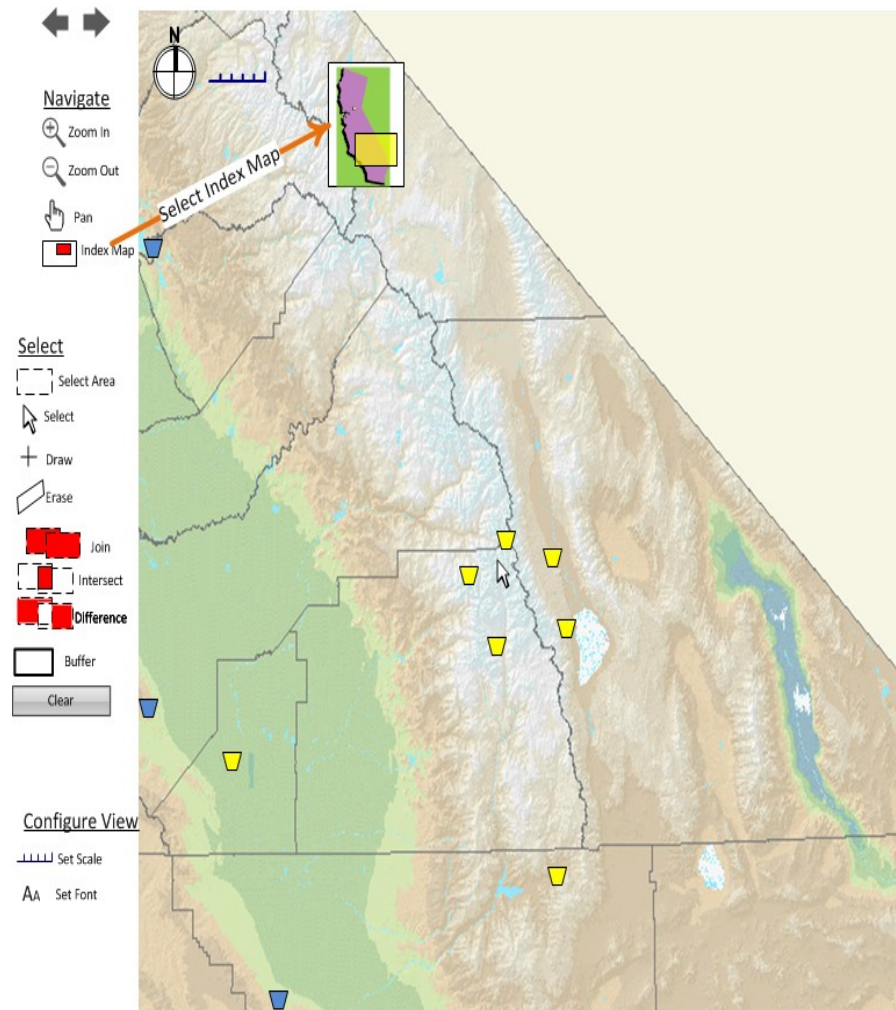


Figure 48. Map Index

### Section 2.3.4.11: View Metadata

Metadata is critical for actors to understand the limitation of datasets. An actor may view metadata for the spoke or the spatial element by right clicking on the name of the spoke. An actor may view metadata for the shapefile by right clicking on the name of the shapefile.

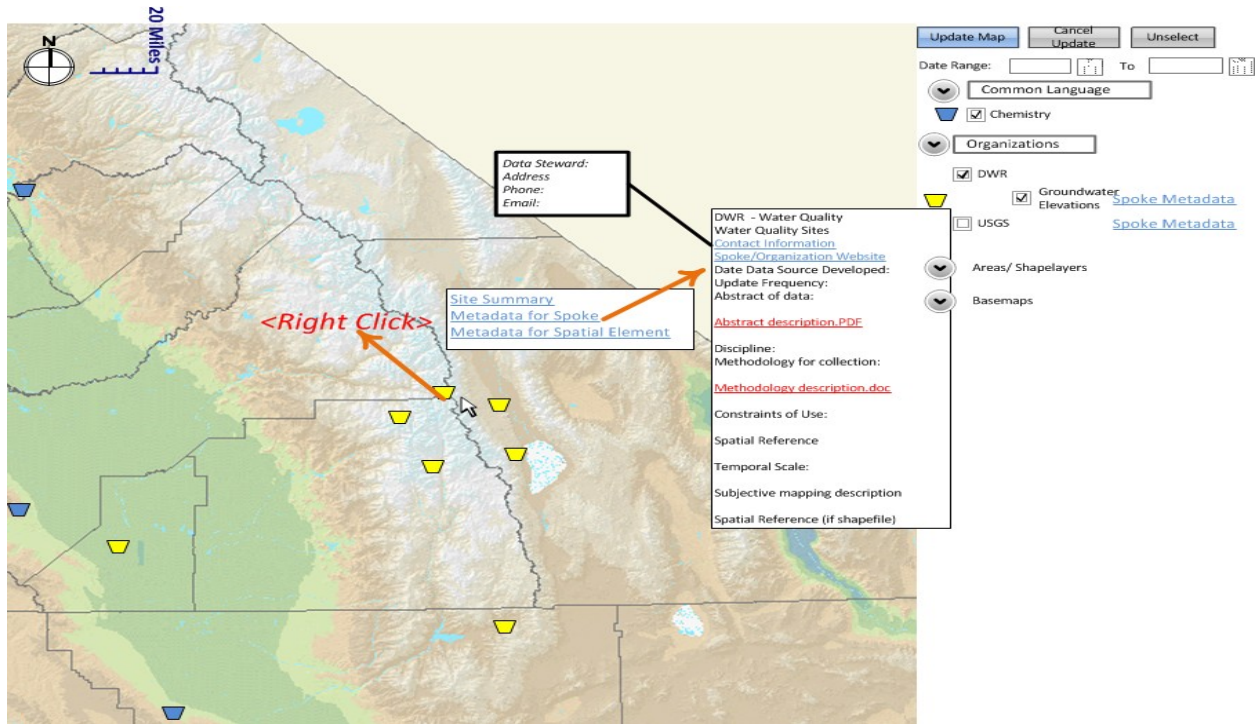


Figure 49. View Metadata

### Section 2.3.4.12: Display Result

Once an actor triggers a query, the system will calculate the estimated time required to prepare and display the results, as displayed in figure 50. If the results require longer than 15 minutes to display, the system will automatically require the user to either change their query request or receive the result via batch. If the results require less than 15 minutes to display, the system will allow the user to choose to either display the results or batch the results for later retrieval.

Results will require 10 minutes to display

☒ Display Results in Window

☐ Batch Results and notify me when ready

Run Query Cancel

If batch selected

Results will require 10 minutes to display

☐ Display Results in Window

☒ Batch Results and notify me when ready

File format

Email address

Run Query Cancel

Figure 50. Batch Result

If the actor requests Water PIE to display the results, the system will display results in a query in a table. An actor can select which records to download, view metadata for individual records, and sort the results.

Table should display selected data, information about selected spatial elements and metadata from all spokes that contributed.

Data provided by the spoke may be time series data, spatial element related data (such as well depth or construction information), and spoke metadata.

Actor can trigger a hydrograph of the results, which will display the hydrograph window, see section 2.3.4.12 for more information on chart displays.



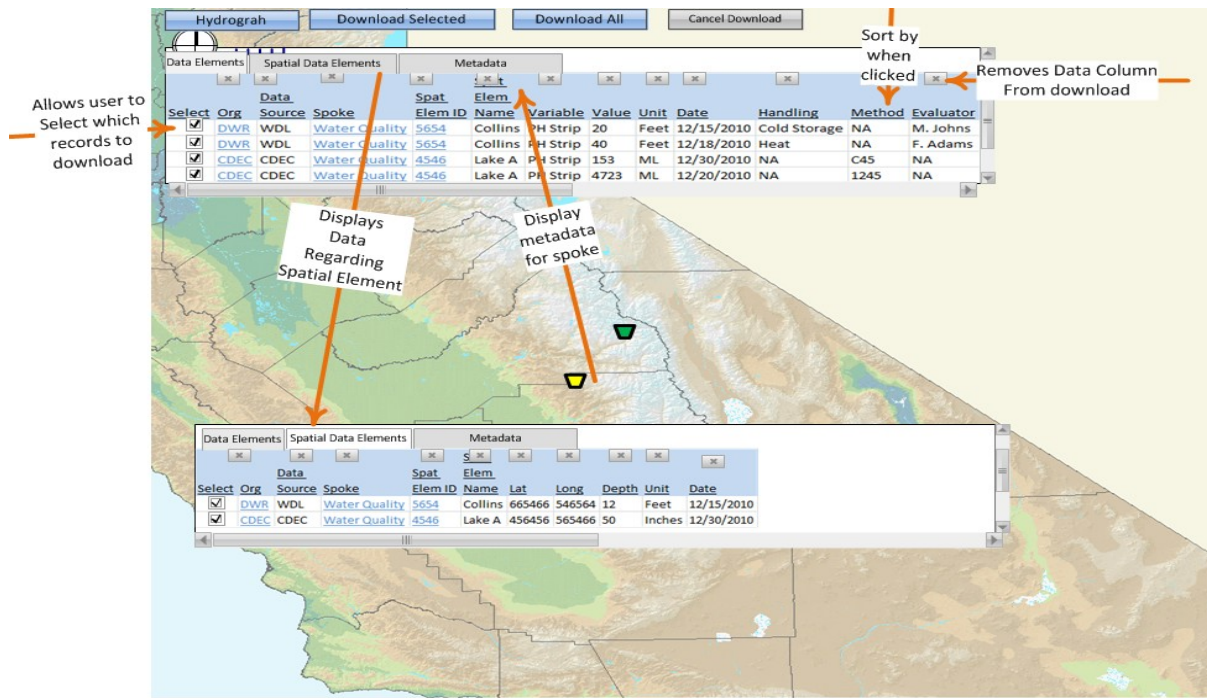


Figure 51. Display Result

### Section 2.3.4.13: Filter Display Result

Filtering the display result allows actors to filter the results of query by date ranges, or eliminate unnecessary fields before the system runs the query. The actor can manage the fields for both the data and any spatial element data.

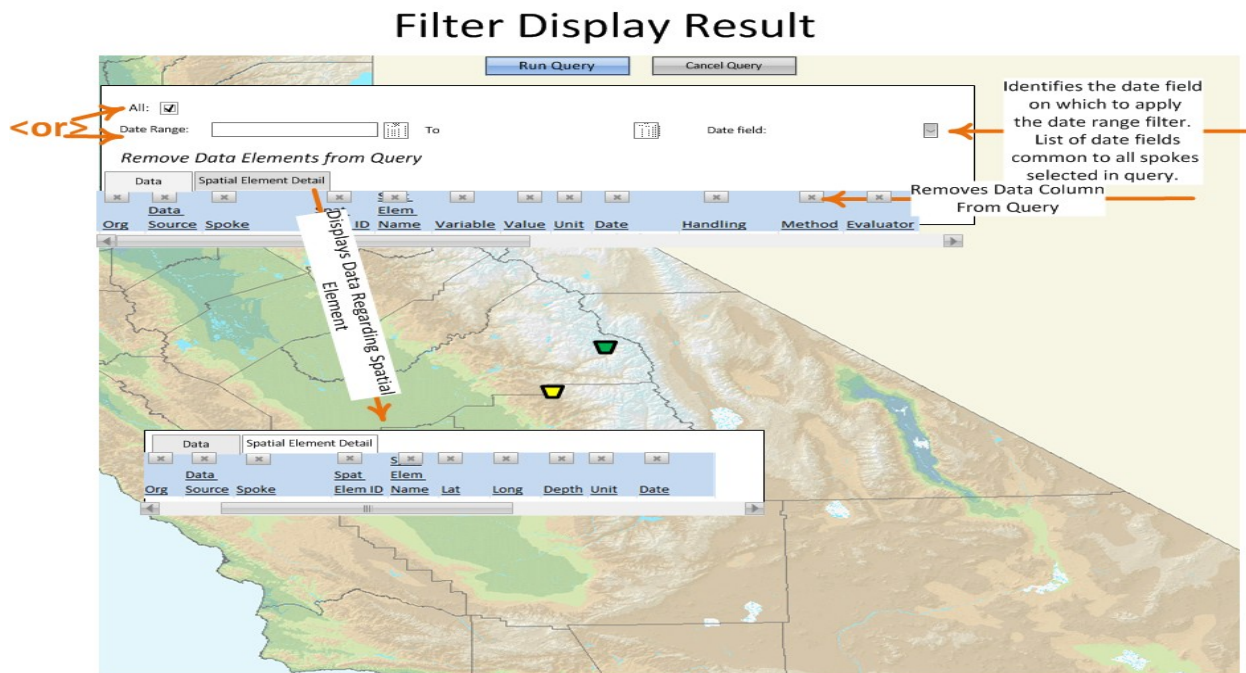


Figure 52. Filter Display Result

#### Section 2.3.4.14: Tabular Search

The tabular search tool allows actors to search for data from a tabular form. Actors can choose to search from terms in the common language, by organization, or by spoke.

An actor begins by selecting the tabular search tool.

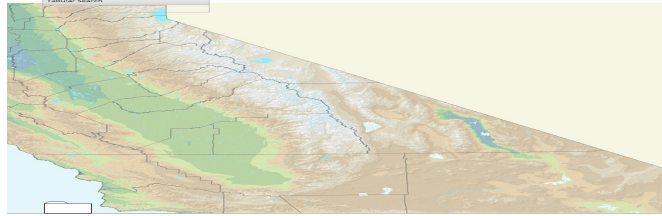


Figure 53. Tabular Search

The tabular query tool is interactive. The tool allows the actor to select a query option. Then, depending on the option selected, the tool displays the appropriate query fields. The tabular query tool has the same options as the map interface for Water PIE, but without the map.

#### Select Query By

Figure 54. Tabular Search, Step 1

If the actor selects Common Language, the form displays the common language categories and elements. The actor can select one or more elements and/or categories.

**Select Query By**

Select Query By

- Common Language
- Spoke
- Spatial Element
- My Water PIE Query

Common Language

- Organic
  - Chemistry
    - pH
    - pH Meter and Electrode
    - pH Multi Parameter
    - pH Strip
- Physical

Displays report parameters once selected.

☐ Filter by Spoke
☐ Filter Using Spatial Element
☐ Filter by Date Range
☐ Filter by Measurement

Display on Map Run Configuration Save Configuration Clear

Figure 55. Tabular Search, Step 2

Once the actor selects the common language categories, the form filters the list of spokes to those that have data in the common language that the actor selected.

Actors can also select spoke or spatial element to begin the query definition. Selecting spoke first filters the list of common language categories and elements.



The actor can select one or more organizations, data sources within an organization, and/or spokes within a data source.

Figure 56. Tabular Search, Step 3

The actor can select a spatial element by selecting a shapefile, then selecting a spatial element within the shapefile. For example, an actor may wish to search for all pH measurements within Sacramento County. The actor would select the County shapefile and select the spatial element Sacramento within the shapefile. When the system runs the query, the system will perform a spatial join on Sacramento County.

The actor can choose multiple shapefiles and spatial elements, and then choose the spatial function to use.

The actor can enter a date range. If the actor selects this option, then the actor must select the date data element upon which to apply the filter from a list of date data elements that are common to all of the spokes selected.

The actor can also choose to filter by value of a data element. In this scenario, the actor must select a data element upon which to filter from a list of data elements that are common to all of the spokes selected. Next, the actor must select the measurement option and value constraints. The system will display a list of date data elements that are common to all of the spokes selected.

Once the actor has selected all the query options the actor wants, the actor can choose to run the query, display the search on the map, or save the query.

If the actor chooses to run the query, the system will retrieve the data and allow the actor to filter the query and result (see section 2.3.3.4 for more information on filtering and displaying query results).

If the actor chooses to display the search on the map, the system displays the options selected on the map view with the spatial elements meeting the search criteria displayed as selected.

In addition, if the actor is a registered user, the actor may choose to save the configuration of the query to the actor's My Water PIE account. For more information about saving a configuration, see section 2.5.3.1.

### Section 2.3.4.15: Manage Shapefile

An actor may download a shapefiles in an OCG or KML format.

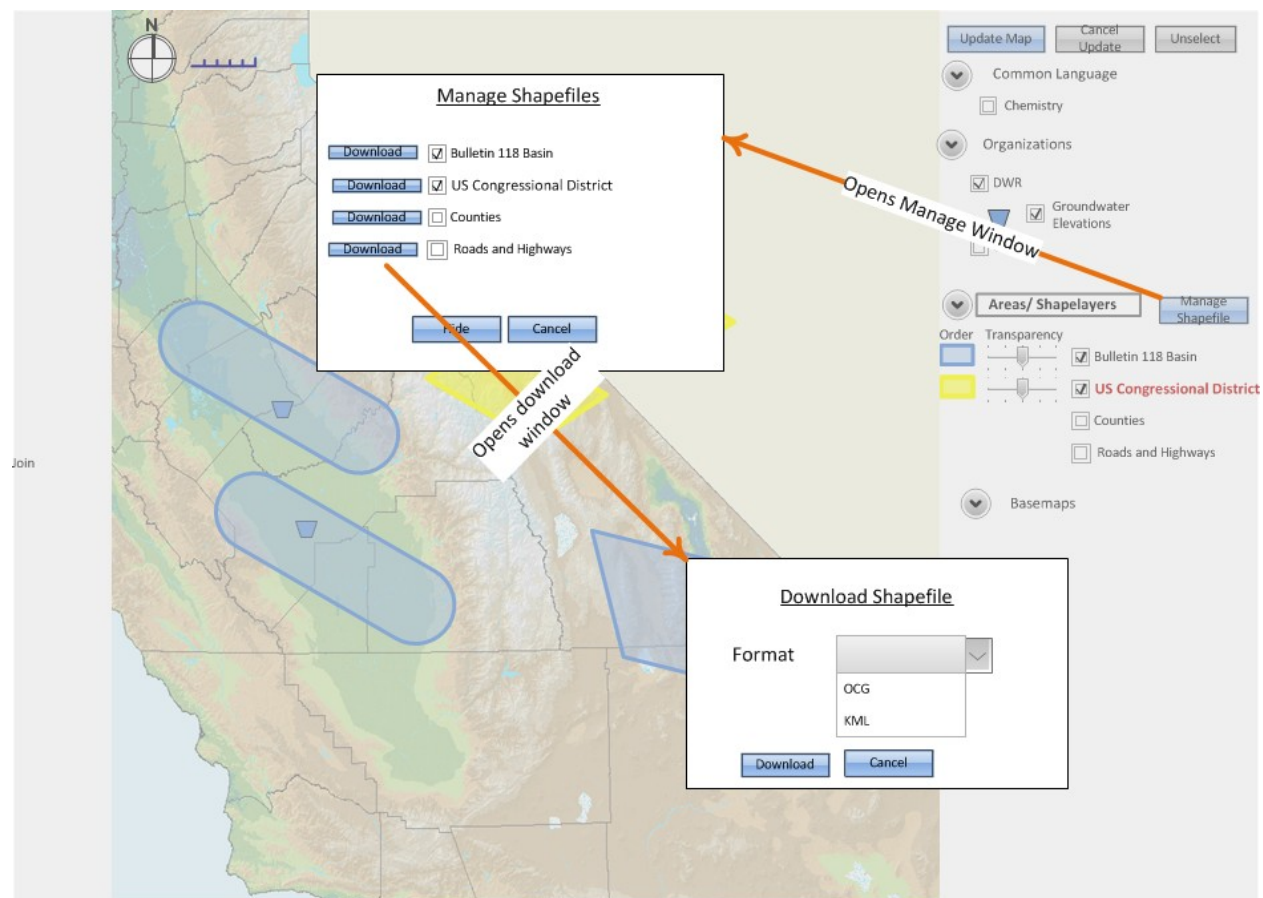


Figure 57. Manage Shapefile

In cases where a spoke wants to reference a shapefile maintained by DWR, the spoke steward can download the spatial element IDs and labels. The spoke steward can build the connection for Water PIE to use this information. When the spoke steward registers the spoke, one of the options will be to reference a DWR shapefile.

### Section 2.3.4.16: Prepare Charts

Actors can create hydrographs for time-series data. Actor can generate a hydrograph after selecting spatial elements, triggered from the search results, or triggered from the tabular search page. Actors can select data elements, sites (spatial elements), and date range that the hydrograph displays. Actors can select more than one variable to display on the hydrograph.

The interface is titled "Prepare Charts" and is divided into a main configuration area and a bottom action bar. At the top, there is a section "Select one or more Variable" with a dropdown menu showing options: "-- All Available --", "Depth", "Elevation", "Dissolved Oxygen", and "Salinity". Below this is a dashed line with the label "<<Advanced>>". Under the dashed line, there is a section for "Date Range" with a "Date field:" dropdown and "From" and "To" input fields. Below the date range, there is a "Title" input field. The main configuration area has three variable selection sections. Each section includes a "Select Variable" dropdown (with the same options as the top dropdown), a "Variable" input field, a "Y Axis Label" input field, a "Y Axis Units" dropdown (with options: "Days", "Weeks", "Months", "Years", "Feet", "Inches", "Meters", "PPM"), and "From", "To", and "Scale" input fields. An orange arrow points to the "Add another variable" button, which is located below the third variable section. The bottom action bar contains three buttons: "Generate Hydrograph", "Save Configuration", and "Clear".

Select one or more Variable

-- All Available --  
Depth  
Elevation  
Dissolved Oxygen  
Salinity

<<Advanced>>

All: ☒

Date Range:  To  Date field:

Title

X Axis Label  X Axis Units  From  To  Scale

Select Variable 1

-- All Available --  
Depth  
Elevation  
Dissolved Oxygen  
Salinity

Variable 1  Y1 Axis Units  From  To  Scale

Select Variable 2

-- All Available --  
Depth  
Elevation  
Dissolved Oxygen  
Salinity

Variable 2  Y2 Axis Units  From  To  Scale

Select additional Variable

Add another variable

Generate Hydrograph Save Configuration Clear

Figure 58. Prepare Charts

In addition, actors may also customize the title, axis labels, scale, font, markers and lines.

The hydrograph will have an index and title even if the actor does not specify either.

## Display Time Series Graph Multiple Variables

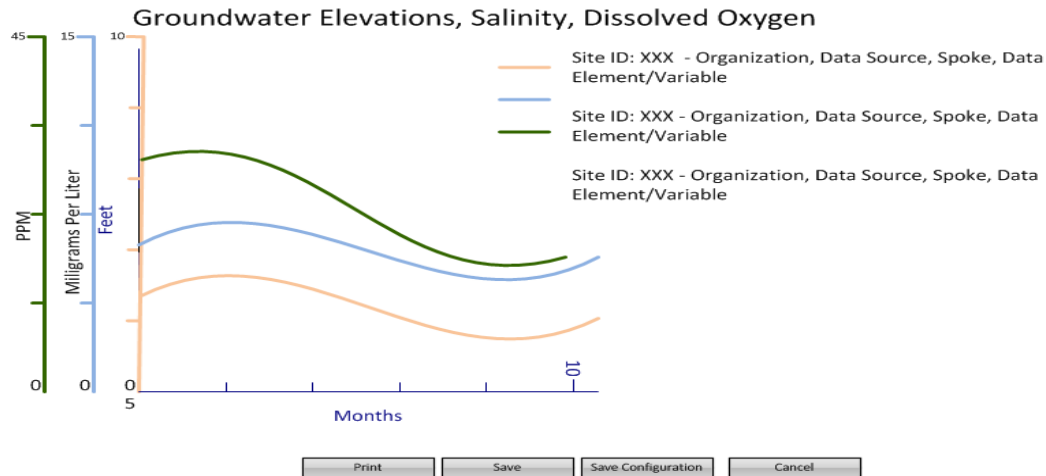


Figure 59. Prepare Charts

### Section 2.3.4.17: Save a Chart

The actor can choose to save the hydrograph, print the hydrograph, or return to the report parameters and rerun the report.

An actor may save a hydrograph as a PNG, JPEG, and PDF format.

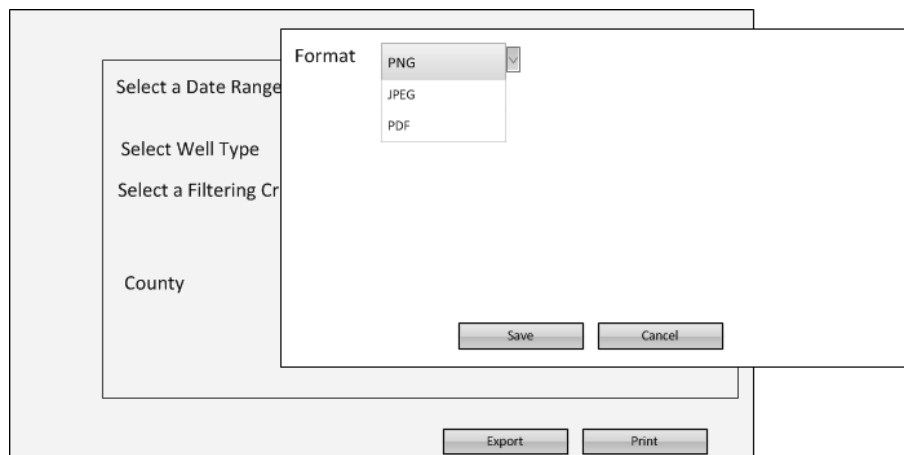


Figure 60. Saving a Chart

### Section 2.3.4.18: Administrative Reports

DWR Water PIE administrators and spoke stewards can view user activity through a series of administrative reports. These actors can view or print these reports. These reports include activity logs for downloaded data and shapefiles, saved queries (configurations), and system error logs.

The system must provide the following options:

- Requests by month or year
- Requests by IP address
- Tabular or plot (line plot or histogram)

In the future, the system may parse the query string for the actor.

Reports	Admin Reports
	User Activity
	User Saved Configuration
	Inactive User Report

Select a Date Range

☐ By Month

☐ By Year

Select a Filtering Criteria

☒ By IP Address

Type

☐ Tabular
   
☒ Chart

Report of

-- All Activities --  
View Configuration  
Query Configuration  
Error Logs

Figure 61. Reports

## SECTION 2.4: WATER PIE ADMINISTRATION

This section discusses the administrative activities that a DWR Water PIE administrator will perform. These activities include configuration of lists (controlled language), such as organizations, configuration of the common language, managing shapefiles hosted by Water PIE, configuring unit conversions, and configuring symbology.

This section includes the following subjects: configure organization and data source list, configure common language, configure dictionaries, configure elements, map elements to dictionary, map elements between dictionaries, configure standard unit definition list, configure unit conversions, configure shapefiles, and configure symbology.

### SECTION 2.4.1: PROCESS FLOW DIAGRAM

The use cases in this section are included in the process flow diagrams in sections 2.1 and 2.2.

### SECTION 2.4.2: UML

The Water PIE Administration Unified Modeling Language Diagram below depicts the use cases included in the User Administration Process described in section 2.4.3.

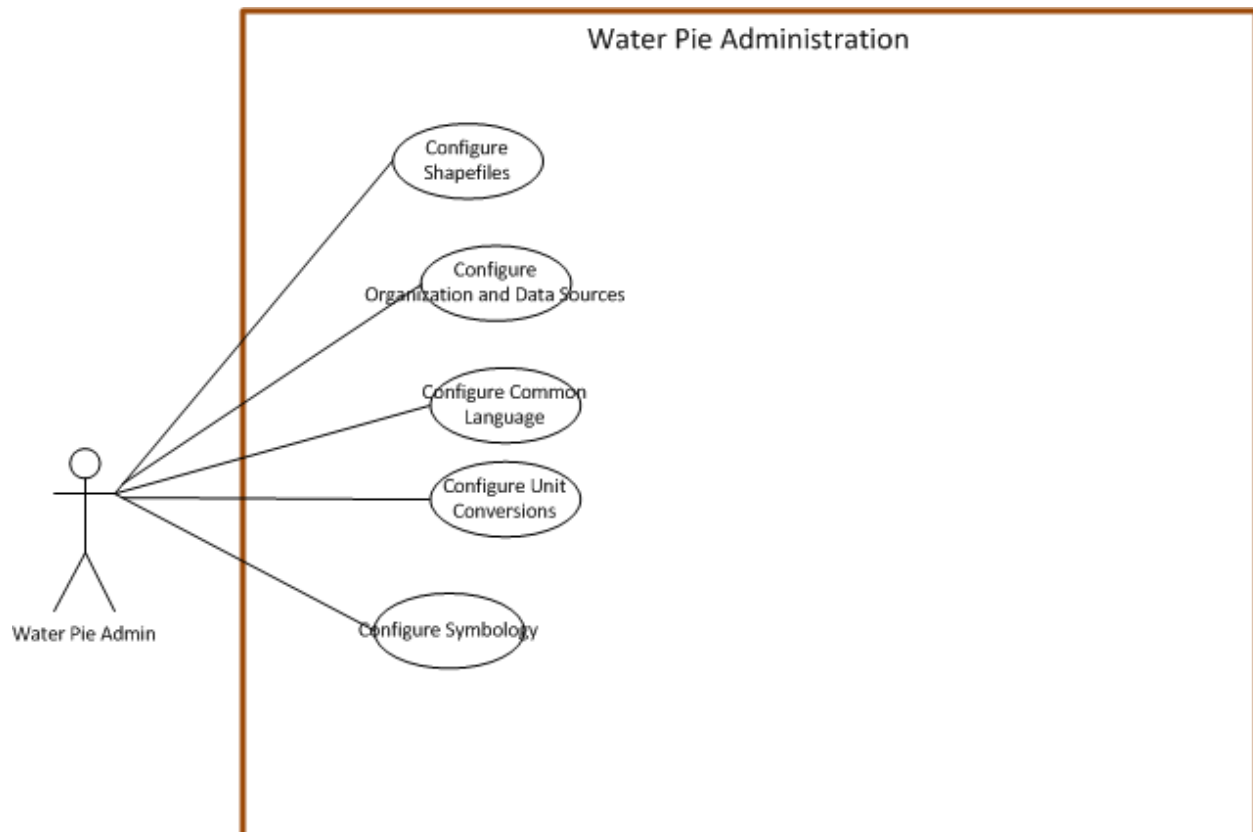


Figure 62. Water PIE Administration Unified Modeling Language Diagram

## SECTION 2.4.3: USE CASES

## Section 2.4.3.1: Configure Organization and Data Source List

Name	2.4.3.1: Configure Organization and Data Source List		
Description	<p>This use case describes the management of the central list of organizations within Water PIE and data sources.</p> <p>Use Case uses the CRUD UC Pattern in section 2.6.</p> <p>This use case outlines the basic steps associated with adding an organization and data sources, and identifies the business rules associated with configuring the organization list.</p>		
Storyboards	Section 2.4.4.1 – Configure Organization List		
Precondition / Assumptions			
Actors	Water PIE Administrator		
Steps	Use Case uses the CRUD UC Pattern in section 2.6.		
Variations			
Exceptions / Business Rules	<ol style="list-style-type: none"> <li>1. ID field and Name field must be unique to when adding or updating an organization.</li> <li>2. Cannot delete an organization that is associated with a user, spoke, or other entity in the system.</li> <li>3. Actor can add more than one data source to an individual organization, but data source is not required.</li> <li>4. Data source names must be unique.</li> </ol>		
Post Condition	The system updates the list of organizations.		
Attributes			
	<b>Attribute</b>	<b>Description</b>	<b>Unique</b>
	Code	Alias for organization	Yes
	Name	Name of Organization	Yes
	Data Source	Data Sources within organization	Yes

### Section 2.4.3.2: Configure Common Language

The common language provides the basis for common terms across all spokes. This makes it possible for an actor to search for a single term, regardless of the data source. The common language must support multiple dictionaries. Each dictionary would contain data elements or spatial data elements that are similar. A single common language element can be included in more than one dictionary.

The system must also support the mapping of secondary dictionaries (or translations), such as the EPA WQX Standard.

#### Section 2.4.3.2.1: Configure Dictionaries

Name	2.4.3.2.1 - Configure Dictionary		
Description	<p>This use case describes the management of the central list of dictionaries within Water PIE.</p> <p>Actor can Create/Read/Update/Delete a dictionary. This function uses the CRUD use case format in section 2.6.</p> <p>This use case outlines the business rules associated with managing the list of dictionaries.</p>		
Storyboards	Section 2.4.4.2: Add Dictionary		
Precondition / Assumptions			
Actors	Water PIE Administrator		
Steps	Use Case uses the CRUD UC Pattern in section 2.6.		
Variations			
Exceptions / Business Rules	<ol style="list-style-type: none"> <li>Dictionary Name field must be unique to when adding or updating a dictionary.</li> <li>Actor cannot delete a dictionary that is in use by a spoke.</li> </ol>		
Post Condition	System updates the dictionary.		
Attributes			
	<b>Attribute</b>	<b>Description</b>	<b>Unique</b>
	Dictionary Name	Name of dictionary/language	Yes
	Desc	Description of dictionary	No

#### Section 2.4.3.2.2: Configure Elements

Name	2.4.3.2.2 - Configure Elements
------	--------------------------------



Description	<p>This use case describes the management of the central list of common language elements within Water PIE.</p> <p>Actor can Create/Read/Update/Delete an element. This function uses the CRUD use case format in section 2.6.</p> <p>This use case outlines the business rules associated with managing the list of common language elements.</p>		
Storyboards	Section 2.4.4.3: Add Elements		
Precondition / Assumptions			
Actors	Water PIE Administrator		
Steps	Use Case uses the CRUD UC Pattern in section 2.6.		
Variations			
Attributes			
Exceptions / Business Rules	<ol style="list-style-type: none"> <li>1. Element Name must be unique to when adding or updating an element.</li> <li>2. XML tag must be unique within the scope of the dictionary.</li> <li>3. Cannot delete an element currently mapped to a spoke.</li> </ol>		
Post Condition	System updates the element in the list of common language elements.		
Attributes			
		<b>Attribute</b>	<b>Description</b>
		<b>Unique</b>	
		Element	Name of element in current dictionary
		Dictionary	Dictionary to search from
		Element Name	Name to be added to dictionary
		Desc	Description of element
		XML Tag	Tag for element in XML
		Format	Data format of element
		Search Control	How the term can be search for by users
		List Type	Display method

#### Section 2.4.3.2.3: Map Elements to Dictionary

Name	2.4.3.2.3 - Map Elements to Dictionary
Description	This use case describes the management of the central list of data elements within Water PIE.
Storyboards	Section 2.4.4.4: Map Elements to Dictionary
Precondition /	System contains common language elements and dictionaries.

Name	2.4.3.2.3 - Map Elements to Dictionary
Assumptions	
Actors	Water PIE Administrator
Steps	<ol style="list-style-type: none"> <li>1. Actor accesses the common language configuration list.</li> <li>2. System displays the list of elements.</li> <li>3. Actor selects dictionary.</li> <li>4. System displays current dictionary mapping.</li> <li>5. Actor adds an element to the dictionary. Include XML tag</li> <li>6. System adds the element to the dictionary.</li> <li>7. Actor moves the element into the appropriate group of elements.</li> <li>8. Actor selects update.</li> <li>9. System updates dictionary mapping.</li> </ol>
Variations	
Attributes	None
Exceptions / Business Rules	<ol style="list-style-type: none"> <li>1. Cannot delete an element currently mapped to a spoke.</li> <li>2. Element must be unique within the scope of the dictionary.</li> </ol>
Post Condition	System updates element mapping.

Section 2.4.3.2.4: Map Elements between Dictionaries

Name	2.4.3.2.4 - Map Elements between Dictionaries
Description	This use case describes the process of mapping elements between dictionaries. To save time and effort when establishing future spokes, the Water PIE administrator may choose to create a new standard dictionary and map it to the common language. For example, many organizations exchange data with the EPA using EPA's WQX. To support simpler mapping, Water PIE would support both the common language and exchange using the EPA's WQX format.
Storyboards	Section 2.4.4.5: Map Elements between Dictionaries
Precondition / Assumptions	System updates common language elements and dictionaries.
Actors	Water PIE Administrator
Steps	<ol style="list-style-type: none"> <li>1. Actor accesses the common language configuration list.</li> <li>2. System displays the list of elements.</li> <li>3. Actor selects Map Elements between dictionaries.</li> <li>4. System allows actor to select the 'to' and 'from' dictionaries.</li> <li>5. Actor searches for element mapped in the 'to' dictionary.</li> <li>6. System displays elements.</li> <li>7. Actor selects an element in the 'to' dictionary mapped elements.</li> <li>8. Actor searches for element mapped in the 'from' dictionary.</li> <li>9. System displays elements.</li> <li>10. Actor selects an element in the 'from' dictionary mapped elements.</li> <li>11. Actor selects map element.</li> <li>12. System maps the elements between the dictionaries.</li> <li>13. Actor repeats process until all elements are mapped in the 'to' dictionary.</li> </ol>
Variations	<ol style="list-style-type: none"> <li>1. Actor chooses to un-map an element an actor mapped previously.</li> </ol>
Attributes	None
Exceptions / Business Rules	<ol style="list-style-type: none"> <li>1. Element must be unique in each dictionary scope.</li> <li>2. The XML tag for the element must be unique in the dictionary scope.</li> <li>3. The system must restrict element duplication within a dictionary.</li> </ol>
Post Condition	The system updates elements mapping between dictionaries.

Section 2.4.3.2.5: Configure Standard Unit Definition List

Name	2.4.3.2.5 - Configure Standard Unit Definition List		
Description	<p>This use case describes the management of the central list of unit definitions within Water PIE.</p> <p>Actor can Create/Read/Update/Delete a unit definition. This function uses the CRUD use case format.</p> <p>This use case outlines the business rules associated with managing the list of standard unit definitions.</p>		
Storyboards	Section 2.4.4.6: Administer Standard Unit Definition List		
Precondition / Assumptions			
Actors	Water PIE Administrator		
Steps	Use Case uses the CRUD UC Pattern in section 2.6.		
Variations			
Exceptions / Business Rules	<ol style="list-style-type: none"> <li>1. Actor cannot delete a unit definition currently mapped to a spoke.</li> <li>2. A unit definition cannot exist twice in the same list.</li> </ol>		
Post Condition	System updates unit list in common language elements.		
Attributes			
	<b>Attribute</b>	<b>Description</b>	<b>Unique</b>
	Define	Type of measurement unit	No
	Display	Unit that will be displayed	No

**Section 2.4.3.3: Configure Unit Conversions**

Name	Section 2.4.3.3 - Configure Unit Conversion		
Description	<p>This use case describes the management of the central list of unit conversion for use when performing tabular searches involving units and generating hydrographs.</p> <p>Actor can Create/Read/Update/Delete a unit definition. This function uses the CRUD use case format in section 2.6.</p> <p>This use case outlines the business rules associated with managing the standard unit conversions.</p>		
Storyboards	Section 2.4.4.7: Administer Unit Conversions		

Name	Section 2.4.3.3 - Configure Unit Conversion		
Precondition / Assumptions	Uses units defined in Section 2.2.4.5.		
Actors	Water PIE Administrator		
Steps	Use Case uses the CRUD UC Pattern in section 2.6.		
Variations			
Exceptions / Business Rules	Actor cannot add a unit conversion to the conversion list twice.		
Post Condition	Unit conversion is added to the list of unit conversions and available for converting units.		
Attributes			
	<b>Attribute</b>	<b>Description</b>	<b>Unique</b>
	Unit Conversion From	Name of from units	Selection
	Unit Conversion To	Units to convert to	Selection
	Formula	Mathematical formula for conversion	
	Status	Approval of formula	

#### Section 2.4.3.4: Configure Shapefiles

Name	2.4.3.4 - Configure Shapefiles
Description	<p>This use case describes the management of the shapefiles Water PIE stores and publishes.</p> <p>Actor can Create/Read/Update/Delete a shapefiles and metadata. This function uses the CRUD use case format.</p> <p>This use case outlines the business rules associated with managing the Water PIE shapefiles.</p>
Storyboards	Section 2.4.4.8: Administer Water PIE Shapefiles
Precondition / Assumptions	<p>Shapefile exists on production side of DWR GIS Enterprise system.</p> <p>Shapefile has complete metadata according to DWR standard.</p>
Actors	Water PIE Administrator
Steps	<p>Use Case uses the CRUD UC Pattern in section 2.6.</p> <p>Actor links shapefile from DWR Enterprise system to Water PIE.</p> <ol style="list-style-type: none"> <li>1.1. Actor can upload a document providing additional information.</li> <li>1.2. Actor can add, update or delete any document uploaded to the spoke</li> </ol>

Name	2.4.3.4 - Configure Shapefiles		
	information. (See UC Patterns CRUD in section 2.6)		
Variations			
Exceptions / Business Rules			
Post Condition	System updates list of shapefiles.		
Attributes			
	<b>Attribute</b>	<b>Description</b>	<b>Unique</b>
	Shapefile Name	Name of Shapefile	Yes
	Description	Description of Shapefile	No
	Location	Where the file is located	NA

#### Section 2.4.3.5: Configure Symbology

Name	2.4.3.5 Configure Symbology
Description	This use case describes the systems configure symbology functions. The use case begins when a DWR Water PIE administrator selects the configure symbology function. The use case ends when the actor modifies the symbology and the system saves the edit.
Storyboards	Section 2.4.4.9: Configure Symbology
Precondition / Assumptions	DWR Water PIE administrator has logged in and accessed the configure symbology functions.
Actors	DWR Water PIE administrator
Steps	<ol style="list-style-type: none"> <li>1. Actor selects configure symbology.</li> <li>2. System displays symbology interface.</li> <li>3. Actor selects spoke. <ol style="list-style-type: none"> <li>3.1. Optional- Actor sets spoke symbology to web-service shapefile or projected XY coordinates.</li> <li>3.2. Optional- Actor sets custom symbology <ol style="list-style-type: none"> <li>3.2.1. Actor selects symbol features</li> <li>3.2.2. Optional- Actor saves symbology as a style.</li> </ol> </li> <li>3.3. Optional- Actor edits shapefile symbology.</li> </ol> </li> <li>4. Actor saves symbology.</li> <li>5. System updates symbology. <ol style="list-style-type: none"> <li>1.1.</li> </ol> </li> </ol>
Variations	<ol style="list-style-type: none"> <li>1. Actor does not set symbology for spatial element.</li> </ol> <p>System selects an unused symbol do represent the unidentified spatial element.</p>

Name	2.4.3.5 Configure Symbology		
Attributes			
	<b>Attribute</b>	<b>Description</b>	<b>Unique</b>
	Symbol	Symbol to display	No
	Color	Color of symbol	No
	Size	Size of the symbol to display	No
	Spatial Element Name	Spatial element symbol represents	Yes
	Spoke	Spoke symbol represents	Yes
Exceptions / Business Rules			
Supplemental	Symbology must follow DWR guidelines for GIS web standards		

## SECTION 2.4.4: STORYBOARD DIAGRAMS

### Section 2.4.4.1: Configure Organization List

DWR Water PIE administrators can add and edit organizations and the organization's data sources. A data source is not required for an organization. However, an organization is required for a data source. Organizations and data sources must be unique.

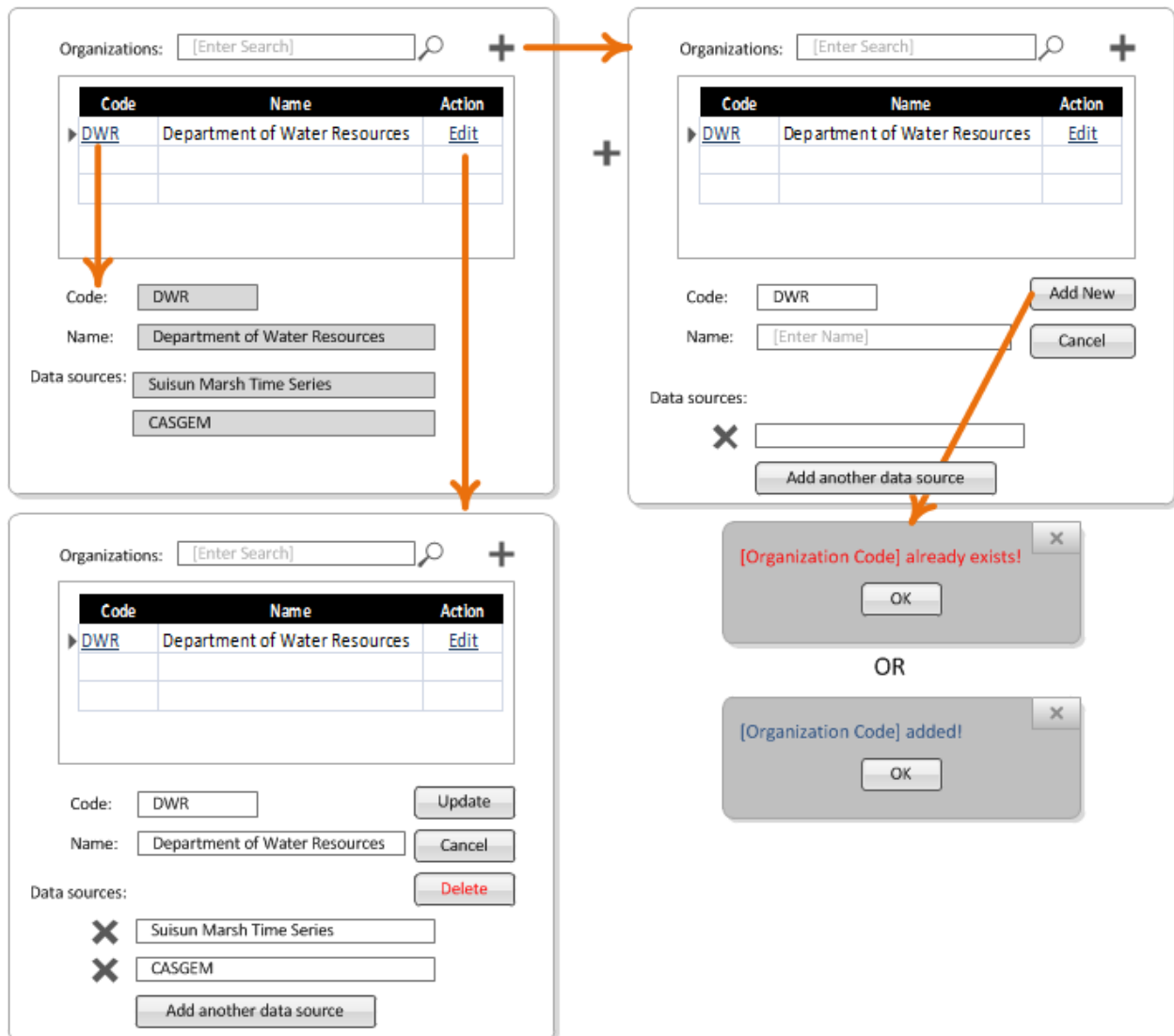


Figure 63. Configure Organization List



### Section 2.4.4.2: Add Dictionary

DWR Water PIE administrators can add and edit common language dictionaries.

The screenshot displays the 'Add Dictionary' interface. At the top, there is a table with the following data:

Dictionary	Description	Action
<a href="#">EPA Standard</a>	EPA Standard Language	<a href="#">Edit</a>
<a href="#">WaterML</a>	WaterML Standard Language	<a href="#">Edit</a>

Below the table, there are input fields for 'Dictionary Name:' and 'Desc:'. An orange arrow labeled 'Edit' points from the 'Edit' link in the table to the 'Update' button in the form below.

The form below contains the following elements:

- 'Dictionary Name:' field with the value 'EPA Standard'.
- 'Desc:' field with the value 'EPA Standard Language'.
- 'Update' and 'Cancel' buttons.
- A red 'X' icon followed by the text 'EPA Standard Description.PDF'.
- 'Attach Description' and 'Add Data Element to Dictionary' buttons.

Figure 64. Add Dictionary

### Section 2.4.4.3: Add Elements

The DWR Water PIE administrator can add and edit common language elements. DWR can also control the field type, search parameters, and menu functions of each element.

Element: 

+

Dictionary: 

+

Map Elements to Dictionary

Field	Description	Dictionary	Heading	Action
<a href="#">Alkalinity</a>	Solution to Neutralize Acids	WaterML	Chemical/Alkalinity	<a href="#">Edit</a>
<a href="#">Alkalinity</a>	Solution to Neutralize Acids	EPA Standard	Chemical/Alkalinity	<a href="#">Edit</a>
<a href="#">Color of Water</a>	Measure of Blue Hue	EPA Standard	Organic	<a href="#">Edit</a>
<a href="#">pH</a>	Activity of Solvate Hydrogen Ion	WaterML	Chemical/Alkalinity/pH	<a href="#">Edit</a>

Element Name: 

Update

Desc: 

Cancel

X [Alkalinity Description.PDF](#)

Attach Description

Delete

XML Tag:

Format: 

String  
Integer  
Floating Point  
Date  
Link  
Variable

Add Data Element to Dictionary

Figure 65. Add Elements

#### Section 2.4.4.4: Map Elements to Dictionary

Once a DWR Water PIE administrator adds a dictionary to the list of dictionaries and a common language data element to the common language list, the DWR Water PIE administrator can map common language elements to one or more dictionaries. In addition, the DWR Water PIE administrator can add and edit groups of elements within a dictionary.

Dictionary: Water ML Map to other Dictionary

Organic

Chemistry [Edit Group](#)

pH

Physical

Add Add Group Update Cancel Remove

**Add**

Data Element

Un Mapped only ☐

Field	Description	Data Type
Radon	Radon Measurement	Value
Salinity	Salinity Ratio	Value
Name	Name of Monitoring Entity	Text

Figure 66. Map Elements to Dictionary

#### Section 2.4.4.5: Map Elements between Dictionaries

The DWR Water PIE administrator can map elements between two dictionaries.

To:

Dictionary: EPA WQX Standard

Element:

Organic

Chemistry

pH [WaterML/Organic/Alkalinity/pH/pH](#)

Physical

Unmap Map Cancel

From:

Dictionary: Water ML

Element:

Organic

Chemistry

pH

Physical

Figure 67. Map Elements between Dictionaries

### Section 2.4.4.6: Administer Standard Unit Definition List

The DWR Water PIE administrator will maintain a list of unit conversions and definitions.

Standard Unit List: [Enter Search] 🔍 +

Find	Display	Action
▶ Inches, Inch, In., Symbol (")	in	<a href="#">Edit</a>
Feet, Foot, Symbol (')	ft	<a href="#">Edit</a>
Celsius, Cels, Symbol (o)	C	<a href="#">Edit</a>

Define: Inches, Inch, Symbol (")

Display: in

[Mapped to Data Elements](#)

Standard Unit List: [Enter Search] 🔍 +

Find	Display	Action
▶ Inches, Inch, In., Symbol (")	in	<a href="#">Edit</a>
Feet, Foot, Symbol (')	ft	<a href="#">Edit</a>
Celsius, Cels, Symbol (o)	C	<a href="#">Edit</a>

Define: [Enter Field] [Add New](#)

Display: [Enter Description] [Cancel](#)

[Mapped to Data Elements](#)

Standard Unit List: [Enter Search] 🔍 +

Find	Display	Action
▶ Inches, Inch, In., Symbol (")	in	<a href="#">Edit</a>
Feet, Foot, Symbol (')	ft	<a href="#">Edit</a>
Celsius, Cels, Symbol (o)	C	<a href="#">Edit</a>

Define: Inches, Inch, Symbol (") [Update](#)

Display: in [Cancel](#)

[Mapped to Data Elements](#) [Delete](#)

Figure 68. Administer Standard Unit Definition List

### Section 2.4.4.7: Administer Unit Conversions

The DWR Water PIE administrator will manage conversions between different units of measure. DWR can edit conversion formulas.

The figure illustrates the 'Administer Unit Conversions' interface through three sequential screenshots connected by orange arrows, showing the process of editing a unit conversion formula.

**Top Left Screenshot:** Shows the 'Unit Conversion' table with three entries: 'Feet -> Inches' (Active), 'Meters -> Inches' (Active), and 'Fahrenheit -> Celsius' (Pending). The 'Feet -> Inches' entry is selected. Below the table, the 'From' field is set to 'Feet', the 'To' field is set to 'Inches', the 'Formula' is '=value/12', and the 'Status' is 'Active'.

**Top Right Screenshot:** Shows the 'Unit Conversion' table with the same three entries. The 'Feet -> Inches' entry is selected. Below the table, the 'From' field is set to 'Feet', the 'To' field is set to 'Inches', the 'Formula' field is empty with a placeholder '[Enter formula, calculation]', and the 'Status' is set to a dropdown menu.

**Bottom Screenshot:** Shows the 'Unit Conversion' table with the same three entries. The 'Feet -> Inches' entry is selected. Below the table, the 'From' field is set to 'Feet', the 'To' field is set to 'Inches', the 'Formula' is '=value/12', and the 'Status' is 'Active'. There are 'Add', 'Cancel', and 'Delete' buttons.

Figure 69. Administer Unit Conversions

### Section 2.4.4.8: Administer Water PIE Shapefiles

DWR will maintain shapefiles. The DWR Water PIE administrator, Geodatabase Administrators, can manage these shapefiles and GIS spoke stewards.

Note: The system will pull the metadata for DWR administered shapefiles from the DWR GeoPortal not entered through Water PIE. The metadata is an XML file. Linking to the metadata is also an option.

The interface consists of three main panels. The top-left panel shows a search bar labeled 'Shapefile:' with a magnifying glass icon and a plus sign. Below it is a table with columns 'Shapefile', 'Desc', and 'Action'. The table lists three shapefiles: 'Terrain' (Includes Land, rivers, mountains, etc.), 'Road Map' (Includes Streets, Highways, Buildings), and 'Satellite' (Snapshot of actual graphic from sky). Below the table are input fields for 'Shapefile Name:', 'Desc:', and 'File:', each with a 'Browse...' button. The top-right panel is identical but highlights the 'Add New' button. The bottom panel highlights the 'Update' button and includes a 'Basemap?' checkbox with a checked mark.

Shapefile	Desc	Action
Terrain	Includes Land, rivers, mountains, etc..	Edit
Road Map	Includes Streets, Highways, Buildings	Edit
Satellite	Snapshot of actual graphic from sky	Edit

Figure 70. Administer Water PIE Shapefiles

### Section 2.4.4.9: Configure Symbology

The DWR Water PIE administrator will have the option to control the symbology associated with each new shapefile. In the event the DWR Water PIE administrator does not set a symbol for a shapefile, the system will select an unused symbol to represent the unidentified spatial elements in the shapefile. This feature applies to points in a shapefile and (x,y) coordinates.

Note: Water PIE should use standardized DWR or industry (e.g., USGS) symbols to the greatest extent possible as well as allow flexibility to the actor so that maps are legible and portray the information clearly.

Select Spoke

Organization Name: DWR

Spoke: Ground Water Measurement

Edit

Select Symbology

Spoke: Ground Water Measurement

☒ Project XY from Database [Edit](#)

☐ Use Web Service Symbology [Edit](#)

Edit Symbology

Spoke: Ground Water Measurement


Select existing symbol:

WDL Well

Monitoring Site


Research Site

Edit Symbol



Import Symbol

Change Color



Size

10.5

Save

Figure 71. Configure Symbology

## SECTION 2.5: MY WATER PIE

A registered user can save custom configurations in the registered user's My Water PIE account for repeated use. These include map configurations, spatial and tabular queries, and hydrographs. For example, a registered user could configure a map and select a set of wells the first time, then return to the configuration without searching for and selecting the set of wells again.

In addition, a registered user can manage the organization of the saved configurations. This includes grouping, renaming, copying, and deleting configurations in the registered user's My Water PIE account.

This section includes the following subjects: perform save configuration, perform open saved configuration, manage My Water PIE configurations, share My Water PIE configurations, and promote My Water PIE configuration to public.

### SECTION 2.5.1: PROCESS FLOW DIAGRAM

Registered users can save custom configurations in the registered user's My Water PIE Account for repeated use.

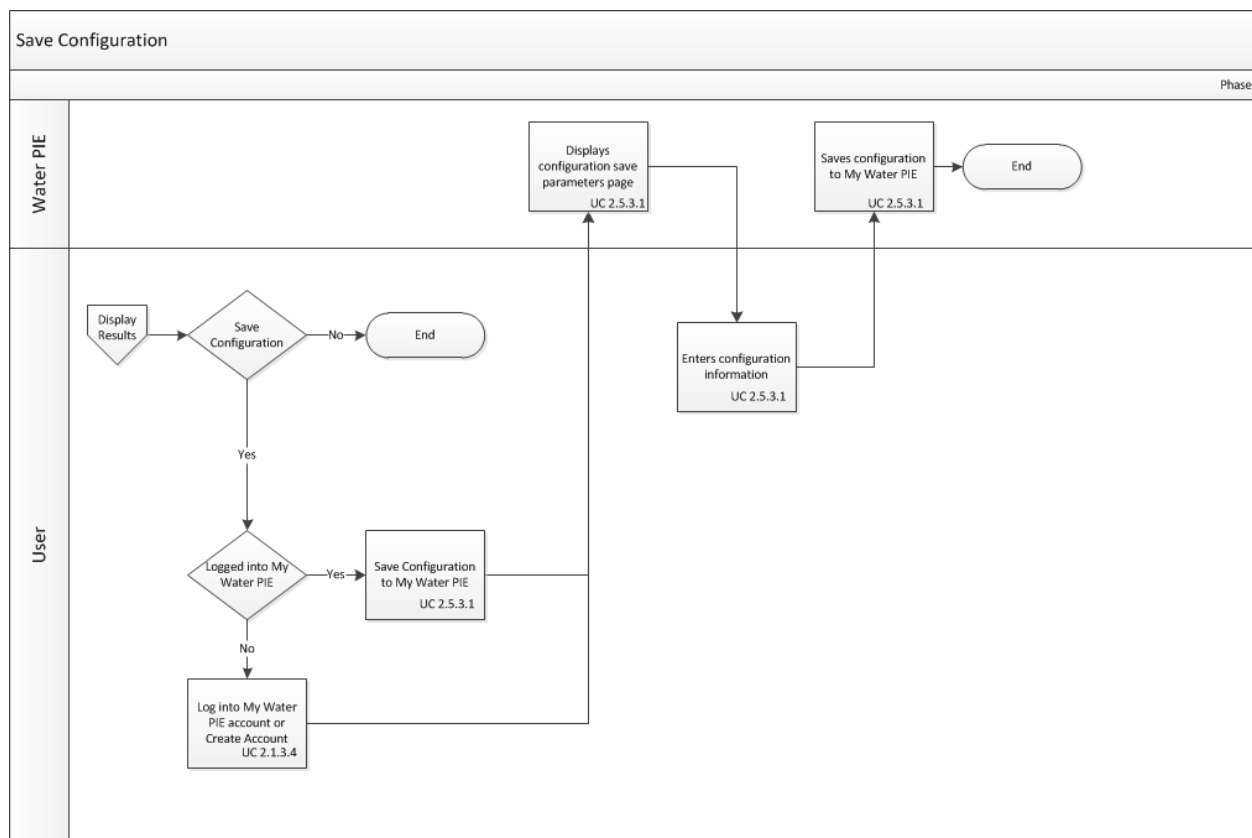
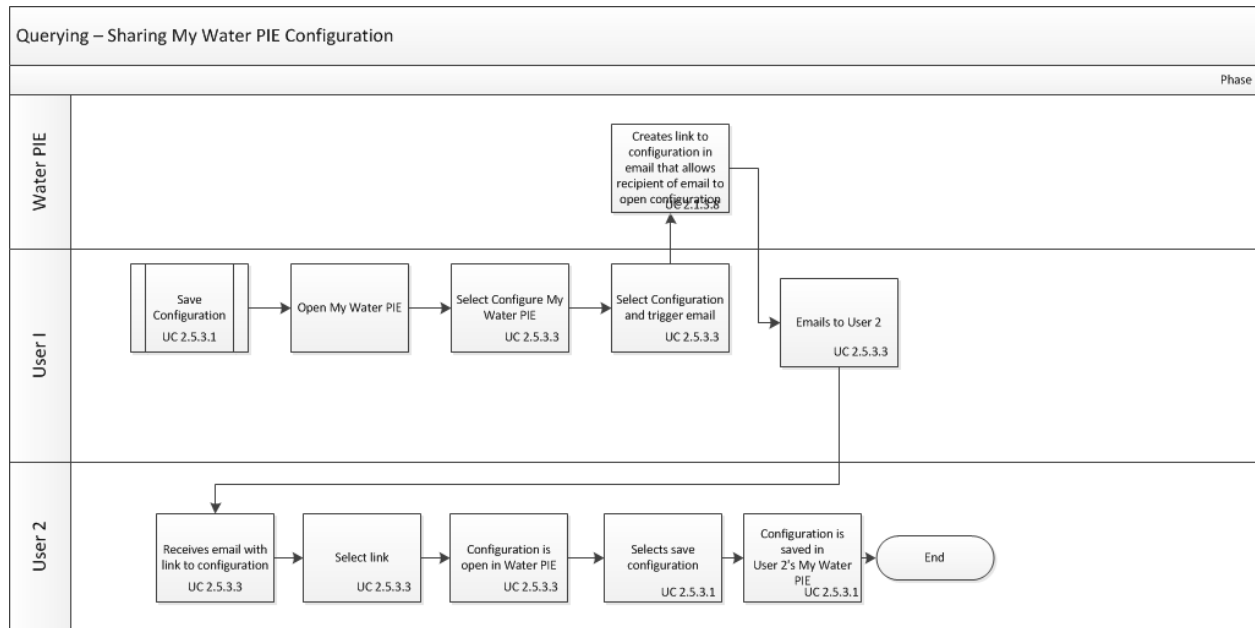


Figure 72. Saving a Configuration

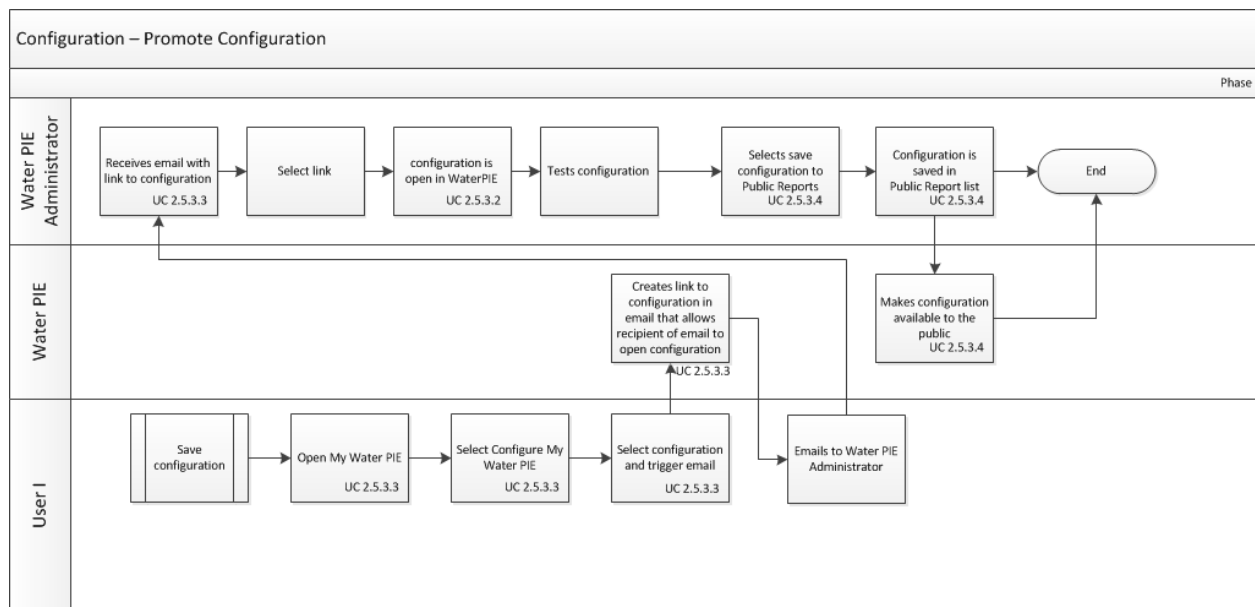
The actor can share these configurations with other Water PIE users by generating an email through Water PIE with a link to the configuration. Once the recipient receives the link, the actor can open and view the results of the query in Water PIE. If the recipient is a registered user, then the recipient may store the query in the recipient's own My Water PIE account.





**Figure 73. Sharing My Water PIE Configurations**

The DWR Water PIE Administrator can promote configurations to public, which makes the configuration available to all Water PIE users. To promote a configuration to the public, the actor emails the configuration link to the DWR Water PIE administrator who tests the configuration. If the configuration is acceptable, DWR Water PIE administrator will promote the configuration into the public reports list.



**Figure 74. Promote Configuration**

## SECTION 2.5.2: UML

The Manage My Water PIE Custom Configurations Unified Modeling Language Diagram below depicts the use cases included in the User Administration Process described in section 2.5.3.

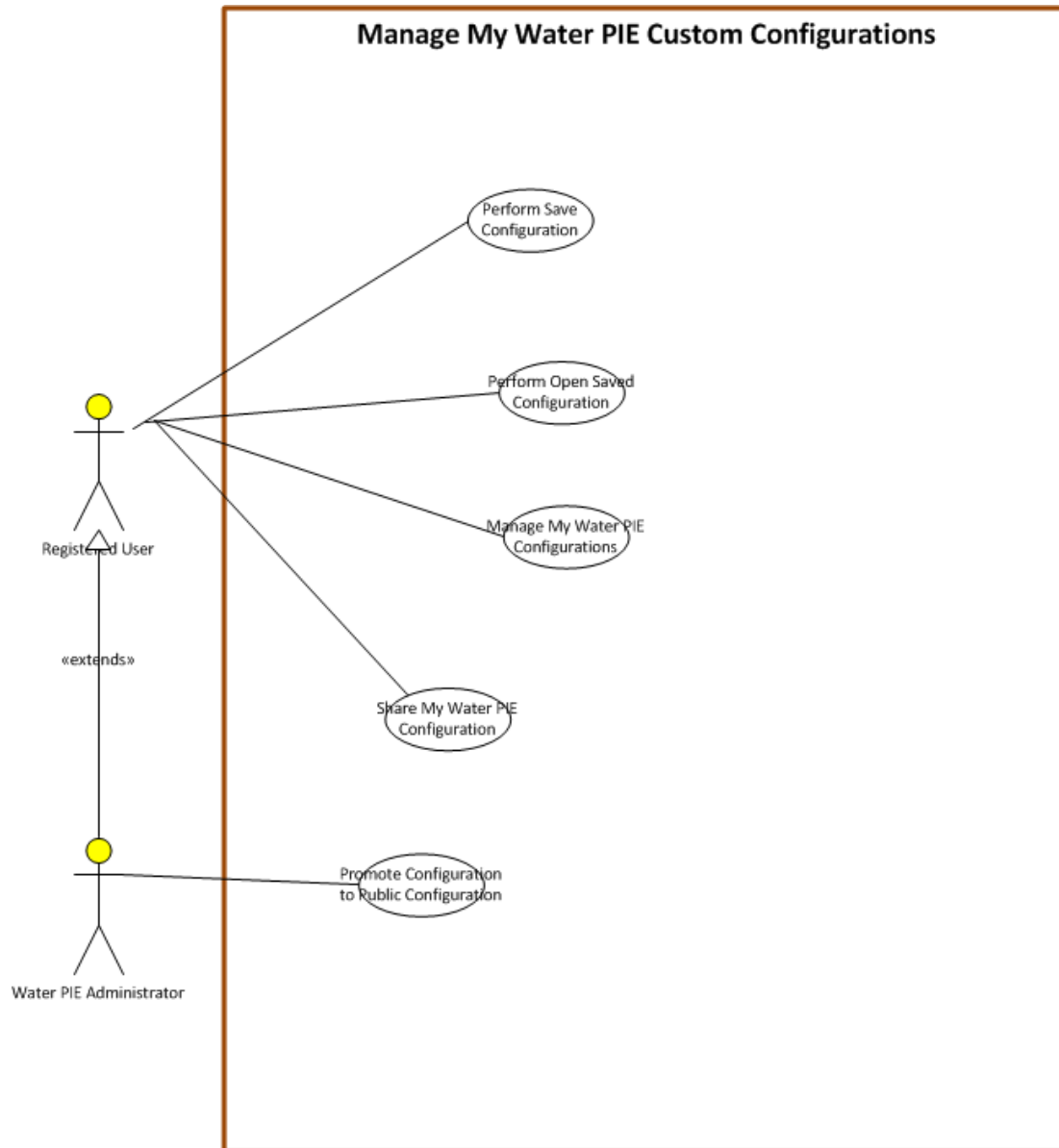


Figure 75. Manage My Water PIE Configurations Unified Modeling Language Diagram

## SECTION 2.5.3: USE CASES

## Section 2.5.3.1: Perform Save Configuration

Name	2.5.3.1 - Perform Configuration
Description	This use case describes the actor's ability to save the configuration of a query, search parameters, or a configured map including a selected set of spatial elements, organizations, data sources, spokes, shapefiles and base maps.
Storyboards	Section 2.5.4.4: Manage My Water PIE Configurations
Precondition / Assumptions	Actor has accessed the system via the website and logged into the system.
Actors	Registered User
Steps	<ol style="list-style-type: none"> <li>1. Actor selects sites, see use case Perform Spatial Search.</li> <li>2. Actor selects My Water PIE.</li> <li>3. System displays save parameters.</li> <li>4. Actor enters save name.</li> <li>5. Actor triggers save.</li> <li>6. System saves custom view including a selected set of spatial elements, organizations, data sources, spokes, shape layers and base maps.</li> <li>4.10. The system logs the request. <b>Required.</b> <ol style="list-style-type: none"> <li>6.1.1. IP address.</li> <li>6.1.2. User, if logged in. Optional.</li> <li>6.1.3. Date.</li> <li>6.1.4. Summary of saved configuration.</li> </ol> </li> <li>7. Optional: Actor modifies custom view. May be repeated. <ol style="list-style-type: none"> <li>7.1. Actor selects My Water PIE.</li> <li>7.2. System displays save parameters.</li> <li>7.3. Actor selects existing saved configuration name from actor's My Water PIE list.</li> <li>7.4. Actor triggers save.</li> <li>7.5. System replaces custom view with updated parameters.</li> <li>4.11. The system logs the request. <b>Required.</b> <ol style="list-style-type: none"> <li>7.5.1. IP address.</li> <li>7.5.2. User, if logged in. Optional.</li> <li>7.5.3. Date.</li> <li>7.5.4. Summary of saved configuration.</li> </ol> </li> </ol> </li> <li>8. Optional: Actor modifies custom view. May be repeated. <ol style="list-style-type: none"> <li>8.1. Actor selects My Water PIE.</li> <li>8.2. System displays save parameters.</li> <li>8.3. Actor enters new custom view name.</li> <li>8.4. Actor triggers update.</li> <li>8.5. System saves new custom view.</li> </ol> </li> </ol>

Name	2.5.3.1 - Perform Configuration
	<p>4.12. The system logs the request. <b>Required.</b></p> <p>8.5.1. IP address.</p> <p>8.5.2. User, if logged in. Optional.</p> <p>8.5.3. Date.</p> <p>8.5.4. Summary of saved configuration.</p>
Variations	<ol style="list-style-type: none"> <li>Actor has not logged into Water PIE. <ol style="list-style-type: none"> <li>System requests user log into the system.</li> <li>Actor logs into the system, see use case Perform Login.</li> <li>System returns actor to Save View page and allows the actor to save the view.</li> </ol> </li> <li>Actor does not enter a unique name. <ol style="list-style-type: none"> <li>System returns a message that the save name is not unique and allows the actor to enter a new name.</li> </ol> </li> </ol>
Exceptions / Business Rules	<ol style="list-style-type: none"> <li>Name of the report must be unique within the user account.</li> </ol>
Supplemental	<ol style="list-style-type: none"> <li>Actor selects tabular search parameters, see use case Perform Tabular Search.</li> <li>Actor selects My Water PIE option.</li> <li>Actor selects configuration parameters, see use case Perform Tabular Search.</li> <li>Actor selects save configuration.</li> <li>System displays save parameters.</li> <li>Actor enters save name.</li> <li>Actor triggers save.</li> <li>System saves custom configuration parameters.</li> <li>Optional: Actor modifies custom configuration and saves as new configuration. May be repeated. <ol style="list-style-type: none"> <li>Actor modifies configuration parameters.</li> <li>Actor triggers save.</li> <li>System displays save parameters.</li> <li>Actor enters save name.</li> <li>Actor triggers save.</li> <li>System save additional custom configuration.</li> </ol> </li> <li>Optional: Actor modifies configuration and updates configuration. May be repeated. <ol style="list-style-type: none"> <li>Actor modifies configuration parameters.</li> <li>Actor triggers save.</li> <li>System displays save parameters.</li> <li>Actor enters custom configuration name.</li> <li>Actor triggers update.</li> <li>System updates custom configuration.</li> </ol> </li> </ol>
Post Condition	System saves updates to the configuration.

Name	2.5.3.1 - Perform Configuration		
Attributes			
	<b>Attribute</b>	<b>Description</b>	<b>Unique</b>
	Configurat ion Name	Name of saved configuration	No
	Group Name	Name of groups of configurations saved by user	No

### Section 2.5.3.2: Perform Open Saved Configuration

Name	2.5.3.2 - Perform Open Saved Configuration
Description	This use case describes the actor's ability to open a saved custom view including a pre-configured set of spatial elements, organizations, data sources, spokes, shape layers and base maps.
Storyboards	Section 2.5.4.2: Open Configuration from My Water PIE
Precondition / Assumptions	The Actor has accessed the system via the website and logged into the system.
Actors	Registered User  Secondary Actor: User
Steps	<ol style="list-style-type: none"> <li>1. Actor selects My Water PIE.</li> <li>2. System displays the actor's list of saved custom configurations.</li> <li>3. Actor selects saved custom configuration.</li> <li>4. Actor triggers open.</li> <li>5. System displays custom configuration parameters from the saved configuration including a selected set of spatial elements, organizations, data sources, spokes, shape layers and base maps.</li> </ol>
Variations	<ol style="list-style-type: none"> <li>1. Actor has not logged into Water PIE. <ol style="list-style-type: none"> <li>1.1. System requests user log into the system.</li> <li>1.2. Actor logs into the system, see use case Perform Login.</li> <li>1.3. System returns actor to save configuration page and allows the actor to save the configuration.</li> </ol> </li> <li>2. Actor has not saved any custom configurations. <ol style="list-style-type: none"> <li>2.1. System displays message that no custom configurations exist.</li> </ol> </li> </ol>
Attributes	None
Exceptions / Business Rules	

Name	2.5.3.2 - Perform Open Saved Configuration
Supplemental	6. Actor selects tabular search. 7. Actor selects My Water PIE from configuration options. 8. System displays the actor's list of saved custom configurations. 9. Actor selects saved custom configuration. 10. Actor triggers the display of the configuration parameters. 11. System displays the custom configuration parameters from the custom configuration. 12. Optional: Actor selects different configuration. May be repeated. 12.1. Actor selects display criteria. 12.2. System updates the parameters to reflect the new configuration selected.
Post Condition	System displays custom configuration.

### Section 2.5.3.3: Manage My Water PIE Configurations

Name	2.5.3.3 – Manage My Water PIE Configurations
Description	<p>This use case describes the process of modifying a registered user's list of saved My Water PIE configurations.</p> <p>This use case begins when a registered user has logged on to the system. The use case ends when the system has updated the actor's My Water PIE configuration list.</p>
Storyboards	2.5.4.4: Manage My Water PIE Configurations
Precondition / Assumptions	Actor has accessed the system via the website, successfully registered as a My Water PIE user, and has successfully logged into the actor's My Water PIE account.
Actors	Registered User
Steps	1. Optional- Actor accesses "My Water PIE Configurations" 1.1. System displays the actors saved configurations list. 1.2. Actor creates/edits groups of configurations. 1.3. System saves grouping of configurations.
Variations	<p>In 1:</p> <ol style="list-style-type: none"> <li>Actor creates configuration.</li> <li>System saves group configuration.</li> </ol> <p>In 1:</p> <ol style="list-style-type: none"> <li>Actor moves configuration from one group to another.</li> <li>System saves group updates.</li> </ol> <p>In 1:</p> <ol style="list-style-type: none"> <li>Actor copies configuration from one group to another.</li> <li>System saves group updates.</li> </ol>

Name	2.5.3.3 – Manage My Water PIE Configurations		
	<p>In 1:</p> <ol style="list-style-type: none"> <li>1. Actor deletes configuration. This is a true delete, not just inactivate.</li> <li>2. System deletes configuration.</li> </ol> <p>In 1:</p> <ol style="list-style-type: none"> <li>1. Actor renames configuration.</li> <li>2. System saves configuration with new name.</li> </ol> <p>In 1:</p> <ol style="list-style-type: none"> <li>1. Actor copies configuration and renames it with the same group.</li> <li>2. System saves configuration with new name.</li> </ol>		
Exceptions / Business Rules	<p>Configuration group name must be unique within the actors list of configuration groups.</p> <p>Password must pass password security standards.</p>		
Post Condition			
Attributes			
	<b>Attribute</b>	<b>Description</b>	<b>Unique</b>
	Configurat ion Name	Name of saved configuration	No
	Group Name	Name of groups of configurations saved by user	No

#### Section 2.5.3.4: Share My Water PIE Configuration

Name	2.5.3.4 - Share My Water PIE Configuration
Description	This use case describes the actor's ability to share My Water PIE configurations with other Water PIE users. The use case begins when an actor selects a configuration to share and ends when another Water PIE user accesses the configuration.
Storyboards	Section 2.5.4.4: Manage My Water PIE Configurations
Precondition / Assumptions	Actor has previously saved a configuration to My Water PIE.
Actors	Registered User (primary actor) User (secondary actor)
Steps	<ol style="list-style-type: none"> <li>1. Actor selects configuration to share with another user (any role or non-registered user).</li> <li>2. System generates email with link to configuration.</li> </ol>

Name	2.5.3.4 - Share My Water PIE Configuration
	<ol style="list-style-type: none"> <li>3. Actor sends email to user.</li> <li>4. Recipient opens the email and selects the link.</li> <li>5. Water PIE opens.</li> <li>6. Systems displays map with custom configuration parameters set.</li> </ol>
Variations	<p>For registered user only:</p> <ol style="list-style-type: none"> <li>1. Recipient elects save configuration to the recipient's Water PIE account.</li> <li>2. System prompts actor to enter description of configuration. <ol style="list-style-type: none"> <li>2.1. Actor enters information.</li> <li>2.2. Actor selects grouping configuration belongs to, if any.</li> <li>2.3. Actor saves configuration.</li> <li>2.4. System displays configuration in actor's My Water PIE.</li> </ol> </li> </ol>
Exceptions / Business Rules	Configuration name must be unique within the list of the actor's configurations.
Post Condition	Actor has shared configuration.
Attributes	None

#### Section 2.5.3.5: Promote Water PIE Configuration to Public

Name	2.5.3.5 - Promote Configuration to Public Configuration
Description	This use case describes the system's ability allow public access to approved configurations. The use case begins when an actor selects a configuration to promote to the public and emails the configuration link to the Water PIE administrator and ends when the configuration is available for public access.
Storyboards	Section 2.5.4.5: Promote Configurations to Public
Precondition / Assumptions	Actor has previously saved a configuration to My Water PIE and sent link to Water PIE Administrator.
Actors	DWR Water PIE administrator
Steps	<ol style="list-style-type: none"> <li>1. System generates link to configuration. <ol style="list-style-type: none"> <li>1.1. System sends email with link to DWR Water PIE administrator.</li> </ol> </li> <li>2. Actor opens link</li> <li>3. Systems displays map with configuration parameters set.</li> <li>4. Actor runs configuration and verifies configuration parameters.</li> <li>5. Actor selects save configuration to public.</li> <li>6. System prompts actor to enter description of configuration. <ol style="list-style-type: none"> <li>6.1. Actor enters information.</li> <li>6.2. Actor selects group in which to include configuration.</li> <li>6.3. Actor saves configuration.</li> </ol> </li> <li>7. System displays configuration to public in My Water PIE.</li> </ol>



Name	2.5.3.5 - Promote Configuration to Public Configuration
Variations	Actor removes configuration from public report list.
Exceptions / Business Rules	
Post Condition	System displays configuration in the list of public configurations.
Attributes	None

## SECTION 2.5.4: STORYBOARD DIAGRAMS

### Section 2.5.4.1: Save Configuration in My Water PIE

A registered user can save a configuration at any time. When the registered user saves the configuration, the system saves all displayed common language, spoke, shapefile and basemap selections along with and selected spatial elements and spatial extent.

A registered user can also open a configuration, edit the configuration and choose to replace the saved configuration or save a new configuration.

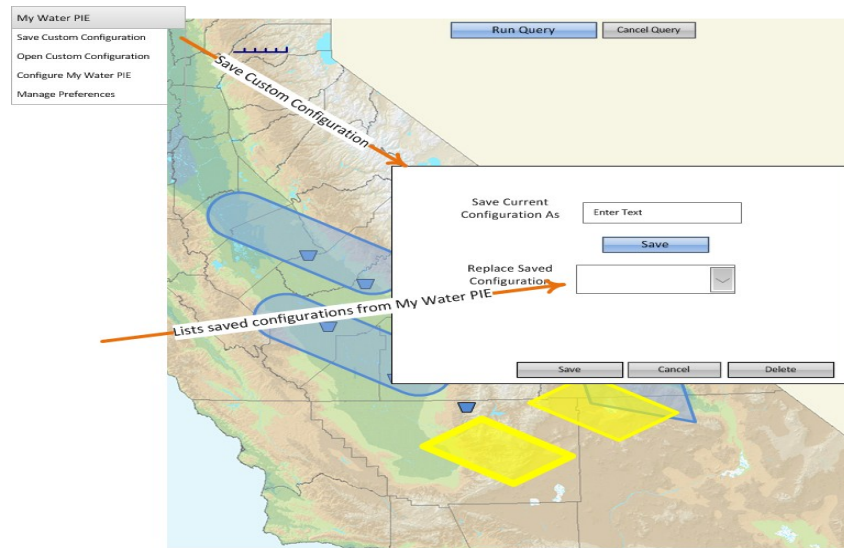


Figure 76. Save Configuration in My Water PIE

### Section 2.5.4.2: Open Configuration from My Water PIE

A registered user can open and run a saved configuration from the actor's My Water PIE account. Saving a configuration saves all the selected common language elements, spatial elements, basemap, shapefiles, shapefile preferences and the spatial extent. When a registered user opens a configuration, Water PIE changes to display to match the system configuration. The registered user can then choose to run or edit the configuration.

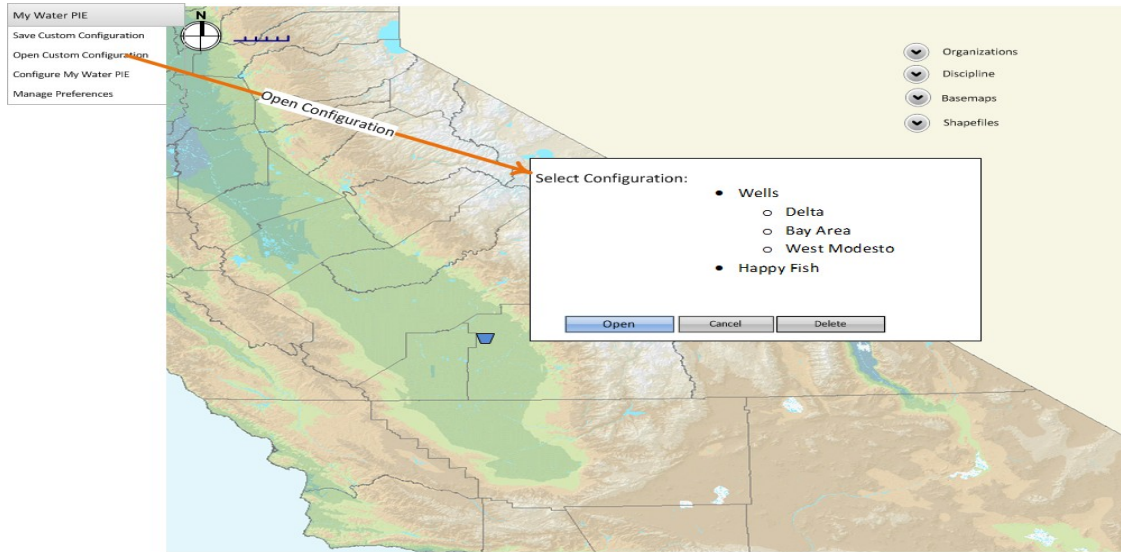


Figure 77. Open Configuration from My Water PIE

### Section 2.5.4.3: Open My Water PIE Tabular Configuration

Registered users can save the configuration of queries created in the tabular search function to My Water PIE for re-use. When a registered user selects a configuration, the system displays its parameters. A registered user may run the configuration, edit it, or use it to create a new report.

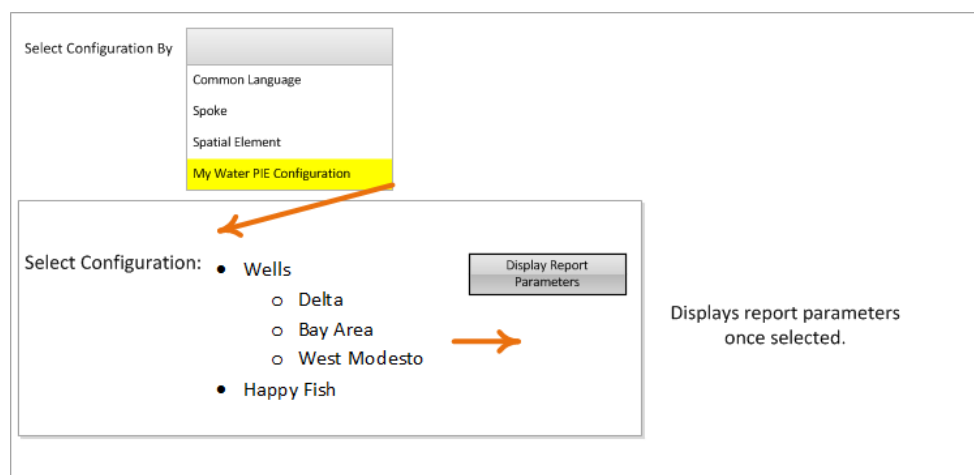


Figure 78. Open My Water PIE Tabular Configuration

#### Section 2.5.4.4: Manage My Water PIE Configurations

From the registered user's My Water PIE Account, a registered user can organize the configurations by creating groups and editing groups of configurations. A registered user can also choose to email a configuration to another user. A registered user can also be use this function to send a configuration to the Water PIE administrator who can then move the configuration into the public domain, see section 2.5.4.5 for additional details on promoting a configuration for public use.

A registered user can also edit a configuration, change the name of a configuration, change the name of a group, delete a configuration, and copy, paste and rename a configuration move a configuration to a new group, and rearrange groups.

The screenshot displays the 'My Configurations' interface. At the top, there is a title 'My Configurations' and a list of configurations: 'Wells >400', 'Alkalinity Group', 'Wells w Alkalinity', and 'Sites w Alkalinity'. Each configuration has an 'X' icon and an 'Email Configuration' link. Below the list are three buttons: 'Create Group', 'Copy', and 'Rename'. An orange arrow points from the 'Create Group' button to a modal window below. Another orange arrow points from the 'Copy' button to the same modal window. The modal window has a 'Group Name' field with 'Alkalinity Group' entered. Below this is a 'Select Configuration' section with a list of configurations: 'Wells >400', 'Wells w Alkalinity', and 'Sites w Alkalinity'. At the bottom of the modal are four buttons: 'Group', 'Copy', 'Delete Group', and 'Cancel'.

Figure 79. Manage My Water PIE Configurations.

### Section 2.5.4.5: Promote Configurations to Public

A registered user can ask DWR to make a configuration available to the public. DWR will review these configurations before the DWR Water PIE administrator promotes them for public use. The DWR Water PIE administrator can promote a configuration from a registered user's My Water Pie to Public. In addition, the DWR Water PIE administrator can group public configurations for easy public access.

**Public Configurations**

Wells >400 [Remove from Public](#)

Create Group

**My Configurations**

Wells >400 [Email Configuration](#) [Promote to Public](#)

Alkalinity Group [Email Configuration](#) [Promote to Public](#)

Wells w Alkalinity [Email Configuration](#) [Promote to Public](#)

Sites w Alkalinity [Email Configuration](#) [Promote to Public](#)

Create Group

Group Name

Select Configuration

Wells >400

☒ Wells w Alkalinity

☐ Sites w Alkalinity

Group Delete Group Cancel

Figure 80. Promote Configurations to Public

## SECTION 2.6: USE CASE PATTERNS

### Use Case Patterns

In the Water PIE use case definitions, the team has prefixed many of the use cases with the word “Configure”. The team used the term Configure in use case model context as opposed to create, read, update, and delete (CRUD) an entity. The diagram below depicts the use case patterns.

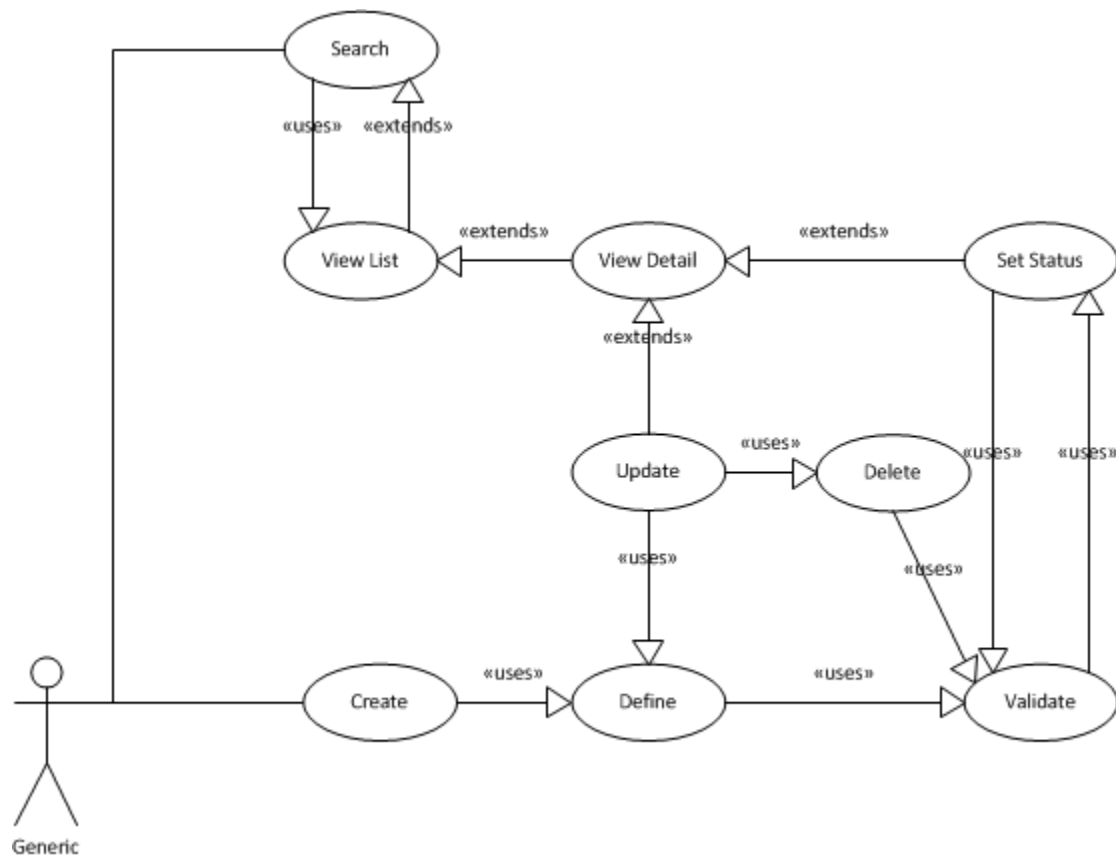


Figure 81. CRUD Use Case Pattern

The ability to read, update, and delete of a particular record requires navigating to that record first, therefore searching and viewing a list are included in the CRUD use case pattern. Creating and updating a record shares common processes, these include definition of the data and validation of entry.

Rather than repeating the process steps for each ‘Configure’ use case, the team referenced the use case patterns where appropriate.

### SECTION 2.6.1: SYSTEM USE CASE: SEARCH

#### Description

This pattern displays lists of records.

#### Actors

System

#### Preconditions/Assumptions

1. None

#### Basic Flow

1. Actor requests to search for [Entity].
2. System retrieves for [Entity]'s search parameters.
3. System prompts for [Entity]'s search parameters.
4. Actor provides [Entity]'s search parameters.
5. Actor sends search parameters.
6. System perform VALIDATE.
7. System returns result.

#### Alternative Flows

No parameter(s) provided.

1. System retrieves for the ALL [Entity]s.

#### Exception Flows

1. None.

#### Post Conditions

2. None.

### SECTION 2.6.2: SYSTEM USE CASE: VIEW LIST

#### Description

This pattern is for viewing a list of records.

#### Actors

System.

Preconditions/Assumptions

1. Actor has provided an Entity to view.

Basic Flow

1. Actor requests to view list of [Entity]s.
2. System **<Use> Search.**
3. System displays returned result.

Alternative Flows

Actor <Use> Search

1. Continue on Basic Flow Step System displays returned result.

Exception Flows

None.

Post Conditions

1. None.

### SECTION 2.6.3: SYSTEM USE CASE: VIEW DETAIL

Description

This pattern is for viewing a selected record.

Actors

System.

Preconditions/Assumptions

1. System has provided a record to view.

Basic Flow

1. System retrieves [Entity]'s detailed information.
2. System displays [Entity]'s detailed information.
3. System verifies if [Entity] can be deleted and provide actor ability to delete.

Alternative Flows

Actor <Use> Update.



Actor could <Use> Delete.

Exception Flows

No Record found.

1. System informs actor of Error.

Post Conditions

1. None.

#### SECTION 2.6.4: SYSTEM USE CASE: DEFINE

##### Description

This pattern defines all the attributes of the data.

##### Actors

Dependent of the use case being performed.

##### Preconditions/Assumptions

1. None.

##### Basic Flow

1. Actor provides [Entity] Information.
2. System **<Use> VALIDATE.**
3. System saves the [Entity].

##### Alternative Flows

Actor cancels out of definition.

1. System prompts actor to confirm cancellation.
  - a) If actor accepts then use case end.
  - b) If actor rejects confirmation, system withdraws cancellation and reverts to previous action before the cancellation.

##### Exception Flows

Error Found

1. System compiles error and return to initiating use case.

##### Post Conditions

1. System creates or updates record.

#### SECTION 2.6.5: SYSTEM USE CASE: CREATE

##### Description

This pattern creates a new record. It ends by presenting the actor a new instance of the record.

##### Actors

Dependent of the use case being performed.

Preconditions/Assumptions

1. System authorizes actor to create a new record.

Basic Flow

1. Actor requests to create new [Entity].
2. System prompts for [Entity] Information.
3. System performs <Use>**DEFINE**.

Alternative Flows

None.

Exception Flows

None.

Post Conditions

1. A record is ready for the actor to define.

**SECTION 2.6.6: SYSTEM USE CASE: UPDATE**Description

This pattern changes one or more attributes of a selected record.

Actors

Dependent on the process.

Preconditions/Assumptions

1. Actor is authorized to update record.
2. A record has been selected.

Basic Flow

1. Actor requests to update the [Entity].
2. System allows actor to update [Entity].
3. Perform <Use> **DEFINE**.

Alternative Flows

None.

Exception Flows

None.

Post Conditions

1. System has defined record.

## SECTION 2.6.7: SYSTEM USE CASE: SET STATUS

### Description

This pattern sets the status of a particular record.

### Actors

System.

### Preconditions/Assumptions

1. The new and old status of record is provided.

### Basic Flow

1. Actor requests to update status of the [Entity].
2. System prompts for new status.
3. Actor provides new status.
4. System **<Use> VALIDATE.**
5. System applies new status to the [Entity].

### Alternative Flows

Actor cancels out of definition.

2. System prompts actor to confirm cancellation.
  - a) If actor accepts then use case ends.
  - b) If actor rejects confirmation, system withdraws cancellation and reverts to previous action before the cancellation.

### Exception Flows

Error Found

1. System compiles error and returns to initiating use case.

### Post Conditions

1. A record updated.

## SECTION 2.6.8: SYSTEM USE CASE: VALIDATE

### Description

This pattern applies data integrity and business rules on the record being defined.

### Actors

System.

### Preconditions/Assumptions

1. System has defined record.

### Basic Flow

1. System checks for generic errors.
2. System checks for specific errors.
3. System returns result of validation.

### Alternative Flows

System required to change status of the [Entity].

2. Perform <Use> **SET STATUS**.

### Exception Flows

Error Found.

1. System displays error message.
  - a) Error = Required Field Missing.
    - i) System displays **Error 1**.
  - b) Else
    - i) System displays error description.
2. Actor acknowledges error.
3. System returns to calling use case

### Post Conditions

1. None.

## SECTION 2.6.9: DELETE

### Description

This pattern is for deleting record from the database

### Actors

Actor

### Preconditions/Assumptions

1. Actor is authorized to delete a new record

### Basic Flow

1. Actor requests to delete[Entity]
2. System prompts for confirmation of delete of record.
3. Actor confirms request for delete
4. System deletes record
5. System informs actor status of delete request

### Alternative Flows

From 2, actor retracts request

1. Request for delete is cancelled

Before 4 Records associated with record the system is deleting have referential integrity.

2. System prompts actor deletion of associated records
3. Continue with 4, if actor confirms request or Cancel request if actor retracts

### Exception Flows

Error Found







1. System Displays Error Message
  - a. Error = Required Field Missing: System Displays Error 1
  - b. Else: System Displays Error Description
2. Actor Acknowledges Error
3. System returns to calling Use Case.

### Post conditions

None

## APPENDIX A: PROCESS FLOW DIAGRAM LEGEND

The process flow diagrams employ standard Business Process Modeling symbols. The table below displays the various modeling symbols used in the process flows and a description of what each symbol represents:

Symbol	Represents
	This represents the start or end of a process flow.
	This represents a link to another process flow. The language in the box represents the linked process flow.
	This represents a process step.
	This represents an off page reference or path. The language in the symbol denotes the page to which the process jumps.
	This represents a decision point where the process may take one or more paths based on the decision.
	This displays the path of the process.